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Original Communications.

NOTES ON NUCLEIN THERAPEUTICS.

By M. O. Teigen, M.D, Minneapolis, Minn.

SINCE November last four cases of pulmonary tuberculosis, of not very long standing, have come under the writer's care, three of whom, up till the 1st of February, had been taking for phthisis creosote, cod-liver oil, arsenic, hydriodic acid, terebene, and a carefully selected diet, aided by digestants. They all made some improvement under that treatment up to a certain limit, beyond which they evidently could not pass. I then advised them to give Professor Vaughan's nuclein a trial. The results thus far obtained are certainly not without encouragement, and, so far as they go, corroborative of the claims made for the nuclein preparations by Germain-Sée, Vaughan, and others, and I am thoroughly convinced, after the short trial on my four cases, that we have in nuclein a therapeutic antagonist to incipient pulmonary phthisis of considerable potency and efficiency. Whether the conception of its *modus operandi* should be some kind of a capability to recruit, upon

short notice, irresistible, triumphant hosts of phagocytes to contend for supremacy with the encroaching bacilli on the pathological battle-field, or whether it acts directly as a bactericide itself without phagocytic intervention, the augmentation of these being only secondary phenomena resulting from diminished infection and invasion, is immaterial as regards the clinical value of the remedy in tuberculosis, and may be a moot point with theory-spinners for years to come. But whatever the conception, the all-important therapeutic fact remains that incipient consumptives, under the continued influence of nuclein, improve, and may sometimes go on to apparently perfect recovery.

The preparation used was that of Parke, Davis & Co., after Professor Vaughan's formula, and the doses were 15 minims hypodermically once a day, increasing two minims a day till 3 grammes per dose was reached. Acting on the not improbable hypothesis that nuclein is not only a producer of leucocytes, but a direct, non-toxic germ-killer as well, I have in two of the cases also employed galvanic electricity kataphoretically, the positive pole being placed over the infected area and the negative carried slowly over the entire opposite surface, underneath which lay diseased lung-tissue. What part the electric current thus plays in stimulating osmosis and absorption, and thereby favoring a transmission of the remedy to the tissues affected, only extensive investigation can reveal. But it does seem that electricity thus applied ought to be a valuable adjuvant in accelerating the effects of a remedy in many deep-seated cases of organic disease.

Case I.—P. P., aged nineteen, a young Norse-American farmer from Gibbon, this State, was examined by me on the 16th of December last. Two sisters had died of phthisis pulmonalis at about his age. He was very pale, anæmic, emaciated, and weak, and had been so for a month and a half. His appetite and digestion were very poor, but the bowels were regular. A harassing cough, with whitish frothy and at times purulent expectoration, kept him constantly awake, and night-sweats and hectic fever were present every night. His evening temperature was usually about 101° F. and his pulse about 120. An examination of his sputum showed the presence of tubercle-bacilli in large numbers. The chest was flat and its expansion much impaired, amounting to less than two inches. The physical signs were typical of phthisis pulmonalis, with dulness over the right apex and high-pitched breathing over the upper lobe on that side. On the middle and lower lobes similar signs were manifest. The ordinary methods of treating phthisis resulted in some improvement, but it was not until he began to receive nuclein, on February 28 last, that he began to markedly improve. He received 15 drops hypodermically every day for five weeks, and during this time gained fifteen pounds. The cough and expectoration decreased, as also the number of tubercle-bacilli in his sputum. He eats like a harvest-hand, and insists that he is growing "tougher" day by day so far as endurance is concerned. Pulse and temperature normal, the evidences of apical induration are gradually receding, and he now presents the appearance of a fairly healthy youth.

Case II. is that of Miss A. P., aged nineteen, a domestic, who was ailing for eight months. I examined her on January 17, 1895, and found her to be a tall, spare, narrow-chested, cachectic-looking woman, with a tubercular appearance. An elder sister died a year ago from phthisis florida, and a younger sister is said to "have it" now. The weight of the patient was one hundred and nine pounds. Evening fever and night-sweats usually. Throat was sore, but the appetite and digestion were fair. Menstruation had been absent since March, 1894. Cough was very persistent, often keeping her awake at night, and the sputa was yellowish gray in color and viscid. Temperature was 100° F.; pulse, 95 and unsteady; respiration, 28 to 30 per minute, and diminished over right apex; moist râles, small and large, were found over right superior and middle lobes; in lower and over left lung exaggerated respiration was present. Dulness and increased vocal fremitus were very marked over the affected areas. In brief, a typical case of incipient pulmonary tuberculosis was before me.

The treatment consisted in the use of creosote by the mouth and its vaporization in the room of the patient, and in the interval administration of emulsion of cod-liver oil and terebene. Under this she made very distinct gains (six and a half pounds) and expressed herself as much improved. Nuclein was now given in gradually increasing doses, with still greater evidences of improvement. The night-sweats became less and the febrile movement decreased. The average gain in weight for several weeks now amounts to two and a half pounds a week, and she is elated over her ability to take long walks. Menstruation has been re-established, and, notwithstanding a recent mild attack of influenza, her recovery does not seem to be retarded.

Added to the other encouraging indications of improvement comes a plainly discernible decrease of vocal fremitus and percussion dulness over the affected area and increased expansion and respiration. Electricity kataphoretically has likewise been employed in her case with seeming benefit, and I now consider her safely on the highway towards recovery.

CASE III.—Mr. O. B., a North Dakota farm laborer by compulsion since the inauguration of prohibition in that progressive young Commonwealth, prior to which time he was engaged for some years in bar-tending, and used to imbibe pretty freely. Some four months ago, while driving, insufficiently clad, sixteen miles against a blizzard in the "bracing, exhilarating ozone" for which this State is justly famous, and to accentuate the influences of which, he and his companion on the way frequently sampled their whiskey-bottles, he contracted a severe laryngo-tracheitis and bronchitis. He lost twenty-five pounds in weight in three months; and weighed one hundred and seventeen pounds when examined here on the 5th of March last. Pulse was 122; temperature, 99½° F; appetite *nil;* vomiting, sore throat, hoarseness, persistent cough, copious muco-purulent expectoration, regular night-sweats after evening fever. Laryngoscopic examination revealed ulceration and tumefaction of epiglottis and vocal cords; laryngeal exudate contained an abundance of tubercle-bacilli. A small area in lower part of left upper lobe presented decreased respiratory murmur, perceptible dulness, and high-pitched percussion sound.

The diagnosis was laryngeal and pulmonary tuberculosis.

He was at once put upon nuclein hypodermically and by atomizer, hematics, and digestants. The first ten days of treatment he gained two pounds in weight, and expressed himself as stronger from day to day. The night-sweats decreased, and eventually ceased altogether.

From the tenth day he grew steadily weaker and worse; cough, expectoration, and dyspnœa increased, the night-sweats returned, and, it becoming apparent that the end could not be far off, he was sent back home, with no ultimate benefit accruing from the nuclein treatment.

CASE IV.—Mrs. H. S., aged thirty-three, farmer's wife. Patient suddenly taken three years ago in June with severe paroxysmal cough and dyspnœa, which cough had continued with but little amelioration up till examination in October last. Emphysema of the lungs, bronchiectasis, and incipient pulmonary tuberculosis of a slowly progressive character were diagnosed. Creosote, cod-liver oil, and hydriodic acid helped her somewhat, but the cough, expectoration, hectic, and night-sweats continued. Nuclein was given secundem artem conjoined with electricity, and this treatment arrested her profuse night-sweats after five days' exhibition. She took the treatment about two weeks, but becoming discouraged with the slow progress made, she unexpectedly started for home, and all traces of her case was lost to me.

Whether the benefits derivable from nuclein treatment in initial cases of pulmonary tuberculosis be lasting or only temporary remains to be seen. But from the limited trial given it, I am inclined strongly to the belief that Vaughan's nuclein did benefit two of my four cases to a rather remarkable degree, hitherto unattainable by the older methods of treatment.

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TREATMENT OF SURGICAL TUBERCULOSIS.

In common with most German surgeons, DR. E. KIRMISSON is opposed to the operative treatment of surgical tuberculosis, especially in childhood. He regards as the chief objects of treatment the immobilization of the affected parts, and the use of appropriate hygienic measures and medicaments for improving the general health. If suppuration has occurred, injections of iodoform are extremely serviceable. In two cases of large subperiosteal abscesses of the thigh communicating with the knee-joint, the results were especially favorable. In the first case, a boy of five years, two injections sufficed to produce a cure; in the second, a boy of fifteen, three injections were required, 5 grammes of a ten-per-cent. iodoform-ether being injected. In cases of spondylitic abscesses the author employs after irrigation injections of iodoform in ether in amounts of 5, 10, and 15 grammes. In a few cases a cure was affected by one injection, in others it was repeated in three or four weeks, until puncture showed the presence of only a yellowish fluid, which is absorbed. The injection of iodoform solutions has certainly proved a decided acquisition to the therapeutics of tuberculous disease of joints.—*Therap. Monatsh.*, January, 1895; quoted from the *International Journal of Surgery*, April, 1895.

THE TREATMENT OF THE SECOND AND THIRD STAGES OF CHRONIC GLANDULAR GASTRITIS.

A Clinical Lecture delivered at the Cook County Hospital, Chicago.

By Fenton B. Turck, M.D.,

Professor of Diseases of the Stomach and Intestines, Post-Graduate Medical School; Attending Physician to the Cook County Hospital, Chicago.

OUR subject at the last clinic was the treatment of the first stages of gastritis. We will now consider the treatment of the second and third stages. We classify because it is convenient to do so for the purpose of treatment.

From the time that Schwan (1836) isolated pepsin and established the fact of its activity in the presence of hydrochloric acid, down to within two or three years, the question of secretion of the stomach has been the prime theme of all pathologists in considering this disease. We now know that the secretory functions of the stomach are not entitled to as much consideration as formerly supposed. We have ascertained the fact that animals can live without stomachs (Czerny has successfully removed the stomachs of dogs and the animals lived), and that large portions of the stomach have been removed in cases of carcinoma and the patient has recovered. In cases where there has been absolutely no secretion whatever of the gastric juice, a vicarious action of the intestines can carry on digestion. Twenty feet of intestines can carry on digestion if the stomach can empty itself.

Last time we spoke of the increased formation of hydrochloric acid. We also considered hyperæmia and increased muscular activity. To-day we have come to the secretory changes and diminished muscular activity that occur in this disease. First, the hydrochloric acid may be increased or it may be decreased. This question is not so essential as has heretofore been supposed. It may vary in health. We know that in experiments on healthy soldiers, Martius found that the increase and decrease depended on the class of foods taken. For instance, albumin, like the white of an egg, will unite with hydrochloric acid and produce acid albumin or syntonin, leaving no free HCl, if a sufficient amount of albumin has been taken to satisfy the HCl. If you give vegetable products, you will find that they do not unite with HCl, but stimulate its formation. Free hydrochloric acid will then be found in the stomach. If you put pebbles into the stomach, the hydrochloric acid formed will not unite with the pebbles, and you will then have free hydrochloric acid. The question is not, What is the disease? but, What is the class of foods taken? Consequently, the question of the percentage of the hydrochloric acid does not necessarily decide whether you have disease or not.

Mucus, as a rule, is increased in the second stage. The same irritations that caused an increase of peptogenic ferments and of mucus may, by a continuation of this process, result in a diminished amount of peptogenic ferments and hydrochloric acid; for, with the continued hyperæmia caused by the irritation of micro-organisms on the walls of the stomach, the hyperæmia that was found in the first stages passes into a state of congestion, and while increased mucus may be formed, a diminished amount of the ferments and hydrochloric acid is found. There is now a marked dilatation of the arterioles, which will produce a dilatation also of the venous radicles and result in a venous engorgement. That is a different pathological condition from what is known as simple hyperæmia. From the congested vessels a transudation of a fluid containing sero-albumin may occur.

We come now to motor insufficiency. Excluding stenosis of the stomach, we may have an irritative poison produced by germs and decomposed food, which may affect the musculature and cause a lack of motility or motor power, so that the muscles cannot move the food onward. We have also in this condition the venous congestion that I spoke of. The muscles are not supplied with sufficient arterial blood. The combination of these factors prevents the contraction of the musculature. We have then what is known as simple dilatation or muscular insufficiency. The retention of food, the hypersecretion of mucus, and the transudation from the vessels, combined with the water that we drink, produce a stagnation, even where stenosis of the pylorus does not exist. The result can only be to further provide the germs with food from which to develop and produce their poisons.

The indications for treatment in the second and third stages of chronic glandular gastritis are: first, to remove the contents of the stomach undergoing fermentation; second, to prevent the growth of micro-organisms; third, to reduce the venous congestion; fourth, to restore the muscular contractility.

It has been considered proper to use lavage. We find that the stomach as a digestive apparatus acts little more than as a churn. Where there is much dilatation in the stomach, stagnation, and marked muscular insufficiency, the upright position simply increases the dilatation. Fleiner has, therefore, introduced a

method of lavage of the stomach in the recumbent position. If we find remnants of food of a day or two before, we must consider this a cause sufficient to indicate lavage. The indiscriminate use of lavage, as before stated, has proved ineffectual, as the patient keeps on growing thinner from the constant removal of nutritious material. Boas and Cseri recommend massage upon the full stomach. In my last lecture I spoke of massage being almost impossible upon an empty stomach. Upon a full stomach, however, especially in dilatation, the contents can be forced into the intestines, if there be no marked stenosis. Rest in the recumbent position is a very valuable method in the treatment of dilatation of the stomach.

Ewart, of St. George's Hospital, London, showed me a method he had devised of raising the foot of the bed to an angle of thirty or forty degrees, thus facilitating the passage of food from the stomach into the intestines. I have combined the method of Ewart and the method of Boas and Cseri with very satisfactory results. By this method we not only empty the organ of its contents, but at the same time restore the congested vessels, which is a very important factor in the treatment of this disease. The patient is soon able to gain nutrition, the musculature becomes hypertrophied, there is an increase in weight, and often within two months the symptoms disappear.

Antiseptics would occur to you as being one of the first requirements in order to retard the further development of germs. We have silver nitrate and, recently, potassium bichromate, which seems to have a similar antiseptic effect as well as an astringent effect upon the vessels, and it seems to stimulate muscular contraction. Strontium salts, especially strontium salicylate, have recently come into prominence, because found to possess antiseptic properties. We have used here the essential oils, which we have found best, so far as antiseptics are concerned, because they are non-poisonous. Moreover, the entire wall may be coated with a thin layer of an antiseptic oil, like cloves or cinnamon, which will remain in contact with the mucous membranes for a longer time.

After the organ has been rendered relatively aseptic, we would consider the therapeutics of dietetics. In cases of dilatation, Fleiner, of Heidelberg, recommends the exhibition of 50 cubic centimetres of milk every half-hour, or 100 cubic centimetres every hour, to be given in small quantities, with the patient in the recumbent position, so that it will readily pass into the intestines, and the stomach will remain empty until it has gained in strength and can take more food. In some cases this may be valuable, but it is generally an utter failure. In many of these cases we find that there is a marked lack of nutrition, and starvation, and even milk in small quantities furnishes but little nutrition. I have found Scotch collops very valuable as a means of nutrition. This is finely chopped, selected meat, which is covered with water and allowed to remain below the boiling-point for two hours until all the fibres have parted. This can be readily massaged into the intestines, and does not furnish a culture for the development of micro-organisms.

I once heard Gerhardt say in his clinic at Berlin, "Find out what agrees with your patient and prescribe that." There is a great deal in it. We have spent much time on the question of what will and what will not digest. We have used the stomach as a test-tube, until it has been found out that it is not a question of whether it will digest or not. If the musculature is intact, the stomach will produce a pulpy condition of the food; the intestines will carry on the rest of the digestion.

Case I.—This patient illustrates a case of muscular insufficiency. One of the marked symptoms is gastralgia, pyrosis, and the effects of auto-intoxication from toxins formed in the stomach. When the stomach has been washed and cleansed, the toxic symptoms are much ameliorated. The condition of pale face, cold hands and feet, and the appearance of sluggish circulation, even in the superficial vessels, would indicate venous congestion of the viscera. There is a lack of nutrition. Panniculus adiposus is absent. The stomach is markedly dilated. In the recumbent position it is able to empty itself within twenty hours. In the same position water will pass out within three or four hours. It does not present the marked symptoms of stenosis.

We commence our treatment upon an empty stomach. We give $\frac{1}{10}$ grain of bichromate of potassium in half a glass of water morning and night. To overcome the hypersecretion, we prescribe the extract of hyoscyamus. To assist in excretion through the skin and kidneys and also to act as an antiseptic, we prescribe 10 grains of strontium salicylate three times a day. To prevent the development of yeast germs and other micro-organisms of fermentation, we use the nebulizer which I have designed, for the purpose of coating the stomach with a thin layer of oil of cinnamon and oil of cloves mixed in equal parts, with the addition of menthol.

We shall restrict the liquids and prescribe a dry diet, composed of chopped meat, broiled

or made into Scotch collops. We shall limit him to two meals a day, so as to give ample time for the stomach to empty its contents into the intestines. To assist in the expulsion of food, we will order massage in the recumbent position after meals. In order to supply the necessary fluids required, we inject 4 to 6 ounces of water into the rectum every four hours. To overcome the sensation of thirst that occurs in these cases, we order the patient to chew spruce gum, so as to excite the flow of saliva. At the same time the saliva which is swallowed in chewing gum has by no means a detrimental effect upon digestion.

There are various methods of overcoming gastralgia. In acute cases, morphine is permissible; but, as in all cases requiring its use, care must be taken not to encourage the morphine habit. Hot fomentations, mustard poultices, dry cupping, hot baths,—all have their place and indication. Where the gastralgia is due to a stagnation of food, lavage seems to be primarily indicated; but, as before stated, it deprives the patient of nutrition. As a rule, oil of cloves and oil of cinnamon, being analgesic, will be found quite sufficient to overcome the symptoms of gastralgia. Where these fail, we can meet the indication by introducing the gyromele and using it alone or with galvanization as a massage to overcome the congestion. When, in a paroxysm, all these methods fail, the last resort would be morphine combined with atropine.

In gastritis the inflammatory process produces a thickening of the pylorus and, by extension, a hyperplasia of all the tissues, commencing in the glands in glandular gastritis. The diagnosis of stenosis depends upon palpating the thickening of the pylorus. This condition is frequently found in women, as there is more commonly a gastro-ptosis, due to their wearing corsets and heavy skirts hung from the waist. This brings the pylorus below the liver, especially during deep respiratory movements, when it may be palpated. When diagnosis cannot be made by palpation, we depend upon complete stagnation with very marked dilatation, which will often indicate a narrowing of the pyloric orifice. There is no curative treatment, except by operation. Loretta's operation has been tried. This consists of simply inserting the finger into the orifice after opening up the stomach, and of dilating the pylorus. In this operation there is danger of causing rupture and infection. It has been superseded by the Heinecke-Mikulicz operation, pyloroplasty, which is performed by making a longitudinal incision and suturing transversely to this incision, throwing the stricture upon the posterior wall, and thus producing a permanent opening from the stomach into the duodenum.

Where stenosis has not advanced too far, we may, by treating the stomach, cause a hypertrophy of the muscle and a compensation by which the food may be forced into the intestines. The treatment for this condition would be the same as in simple dilatation without stenosis.

When gastritis has advanced into the atrophic stages, when the muscle-tissue as well as the glandular elements become infiltrated with round cells and connective tissue is formed, when a mucoid metamorphosis of the peptogenic cells and a cystic degeneration of the glands take place, we cannot hope to restore the organ by any means. When this atrophy has occurred, true gastrectasia exists, and Ewald concludes that "all is up." We may, however, consider the removal of the organ, uniting the free duodenum to the cardiac orifice. This operation is now under consideration and may become one of practical value.

Before complete atrophy has taken place, we may expect to restore the weakened glands that have not been entirely destroyed, and, if possible, to cause a hyperplasia of muscle-tissue, so that the organ, although not completely restored, may still be able to carry on its work.

CASE II.—This woman before you came into our clinic three months ago. There was a total anacidity and but a very weak reaction for peptones. Food remained in the stomach for several days. Particles were recognized that were known to have been in the stomach four or five days, giving evidences of a marked ischochymia, as Einhorn aptly names this condition. Particles of the mucous membrane were found in the wash-water, which, upon section, showed a mucoid metamorphosis of the peptogenic cells. This was shown by the hyaline character of the peptogenic cells, appearing, as you see here, like transparent beads. The peptogenic cells could not longer produce pepsinogin, but the protoplasm was transformed into mucinogin. Other parts of the glandular element showed cystic degeneration, round-cell infiltration, and a loosening of the glandular cells from the basement membrane. She was much emaciated, cachectic, and presented the symptoms and general appearance of carcinoma ventriculi. Still, the fact that no lactic acid germs and no signs of lactic acid fermentation could be found, the absence of a palpable tumor, and the

long history of gastric disturbance, while not excluding, did not favor the diagnosis of carcinoma ventriculi.

We instituted a vigorous treatment, stimulating the glands and circulation by a tincture of capsicum and extract of condurango, and further applying an antiseptic of essential oils, nitro-hydrochloric acid, faradization, and internal massage. As a diet, we gave her Scotch collops. Although there were no appreciable ferments in the stomach, we expected the intestines to carry on the digestion, the contents being massaged from the stomach into the intestines. After a daily treatment of three weeks, hydrochloric acid, rennet ferment, a stronger reaction for peptones appeared. Rice introduced at night could not be found at the end of twenty-four hours. Within three months from the time of treatment the patient was discharged, but returns once a month for observation. She has gained thirty-five pounds in weight and considers herself cured.

DIPHTHERIA: TONSILLOTOMY AS A PREVENTIVE MEASURE.

By Foster Godfrey, M.D., Mimico, Canada.

MEMBERS of the profession who have had year after year to deal with this dread disease in its epidemic malignant form will, I am sure, welcome any measure which has for its object the prevention of such an insidious scourge.

With this end in view, I desire to give my experience with the above as a preventive measure.

For the past three years we have had recurring epidemics of diphtheria in this district, breaking out about the 1st of February and gradually losing its virulency towards the latter part of April.

In February of 1893 it became epidemic among the two hundred boys of the Victoria Reformatory, and while treating the fifty cases we had at that time, forty-three gave a history of having one or both tonsils hypertrophied. It then occurred to me that these very faucial tonsils, tunnelled with crypts hidden away from any form of topical medication, were veritable hot-beds of infection; and even after the patient had recovered and been isolated for the usual time, there was no guarantee that he did not carry a concealed weapon in the shape of a harmful Klebs-Loeffler tenant, hidden away in some forgotten recess, only waiting a suitable opportunity to initiate a recurrence of the malady.

Believing that prevention is better than cure, we resolved to remove all tonsils showing any hypertrophy whatever; hence examinations were made of the throats of all boys on coming into the institution, and if an enlargement of either faucial tonsil was detected, it was at once condemned to the "guillotine," which, thanks to the inventive genius of a Mathieu, does its work rapidly, easily, and well, far beyond any device for this work with which I am at present acquainted.

Since June of 1893 over one hundred tonsils have been removed, with the gratifying result that we have not had one case of diphtheria in the institution since April of that year, although every winter and spring the town and surrounding country have had their annual epidemics of the disease in its most virulent types. Even those boys who are subject to yearly attacks of "quinsy" have passed safely over the trying winter period of our northern climate without a visitation from their old enemy, because, in my opinion, the tonsillotome has removed the location, so to speak, of that disease, as there are no follicles left behind to become filled with carious secretions and inflamed.

As every pathologist knows, the proper field for colonization of these various micro-organisms is a location in the animal economy where the vitality of the living tissues is low,—to wit, the tonsil. Add to this the heat and moisture of the buccal cavity, and a no more suitable field could be found for the active and energetic bacillus of diphtheria.

I do not mean to say that this fact, in connection with the prophylaxis of this disease, has not been mentioned before, but I do say that the proper amount of importance has not been given to the removal from the throats of our little patients of these reeking pest-houses called enlarged tonsils.

We—the general practitioners—seem to have an uncalled-for fear of this simple and easily performed operation, putting them off with, "Oh, they will grow out of it," etc.

The principal reason for this, I think, is the fear of hemorrhage. Now, the experience of such noted laryngologists as Browne and Mackenzie proves that this bugbear is merely a myth. The first of these operators only met with two slight accidents from this source; the latter, in his many thousand cases, never had one; finally, in the opinion of Bosworth, the operation of tonsillotomy is practically one unattended with danger.

I do not wish any of the readers of this journal to infer that I think all danger of contract-

ing this disease ceases with the removal of a tonsil or two, but I am satisfied that we greatly reduce the chances of our little patients contracting the disease; and if it does gain a foothold, their chances of recovery are immeasurably increased, for who among us has not seen a tonsillar diphtheria pass into the laryngeal form from our utter inability to reach or locate the membrane behind the swollen tonsils?

After the faucial tonsils are removed, the post-nasal region should also be examined with the index finger of the right hand, and if any adenoid growths are there found, they should be broken down as far as possible by the nail of that finger, a procedure which will usually be found sufficient to clear the post-nasal space.

In this age of sanitary medicine great care is taken to put everything in connection with our homes and public institutions in a perfectly healthy condition; then why not take another step, and place the main gate-way to the human body in a proper sanitary state by systematic attention to the teeth, throat, nasal, and post-nasal passages of our children?

PSORIASIS TREATED WITH OIL OF COPAIBA. RECORD OF TWO CASES.

By J. Abbott Cantrell, M.D.,

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THE use of the oil of copaiba in the treatment of psoriasis has been so fruitful of good results in my hands that I venture to record two examples showing its power of action in this cutaneous disease. I cannot believe that this method will offer many good results in this condition, but both of the cases herein recorded were under several means of treatment without the slightest abatement of the trouble until copaiba was used.

Case I.—Miss M., aged twenty-nine, was brought to my clinic by Dr. J. T. Scott, of Medley, W. Va. The girl was unmarried, was the third of a family of six girls, none of whom had shown a similar condition, nor had the disease ever been witnessed in either her paternal or maternal relatives. She had always been healthy until the appearance of the psoriasis, which had first attracted attention when she was seventeen years of age. The disease began at the time stated and spread rapidly over the entire body until I saw her, when the condition was as follows: the eruption occupied a great portion of the body surface, the lesions being small and large, some of which had coalesced, making very large areas of affected skin. The lesions ranged in size from a pin-head papule to a patch or two which were about seven or more inches in diameter upon the back and chest, while those upon the abdomen were nearly as large. Those upon the extremities ranged from a pea-sized papule to lesions having a diameter of several inches, the latter of which had coalesced, forming an irregular lesion. All of the lesions were distinct, with abrupt edges, being covered with the characteristic silvery-white or mother-of-pearl imbricated scales. The girl stated, and was corroborated by her physician, that the disease had had no abatement since it was first noticed, although she had never been without treatment for it. She came under the care of her present physician, and was immediately brought for my advice in the matter of treatment. I found from her that she had been under almost all forms of medicines, and as the arsenic which she had been taking had made no alteration in the skin manifestation, I advised that she be placed under strict observation, that she be given 5 minims of oil of copaiba in capsules three times daily, that she be given good nourishing diet, and allowed free access to open-air exercise. The case passed from my view, although I occasionally heard from the attending physician, and in the latter part of the sixth month of treatment the report was that she had not one lesion present, and as that has now been some twelve or fourteen months ago, I feel that the treatment is well worthy of attention. I think it well to make note of the fact that, as there were no distressing symptoms to the girl on account of itching, I did not advise any local measures, simply because she did not wish to be obliged to use ointments if there was a reasonable hope of her getting well without them, as that had been the main treatment which she had been under for the previous years, and she stated that it was very disagreeable to her.

Case II.—Mrs. P., of Ocean View, Del., came to my office on November 10, 1894, with an eruption scattered over her body in irregular areas. She stated that the disease had existed for fifteen years, but that she had been continuously under the care of physicians, and that she had got some relief, but that the disease was never actually cured. The condition was found to occupy the back, chest, and head, and lesions were found scattered

over the extremities. The lesions were papules as first witnessed, but they soon spread, until, at her visit to my office, I found some the size of a bank-note, while others had a diameter of seven or eight inches. The woman had always been in good health, and no one in her family had ever had the same condition, but since this time I have had her younger sister under treatment for the disease. When first seen by me, I placed her upon 5-minim doses of oil of copaiba, with instructions that she was to keep under strict treatment for at least three months, at which time I wished to see her again. She presented herself at the appointed time, when it was found that the condition was decidedly improved; in fact, there were no new lesions present, the old ones were faded in color, there was no scaling, and she was fairly comfortable. I saw her again only a few days ago, and did not find a single lesion present, so that I felt that at last she had received the proper treatment. Her sister did not continue treatment for more than a month, when all of the lesions disappeared, and there has been no return of them.

After seeing the good results in these cases, I thought the record might be interesting as well as instructive, and, having this in mind, I present it for what it is worth, hoping that it will not fail to reach the eye of some one who may happen to have such a case under his care, and that it will assist him in the cure of it.

Of course this does not present all of the cases in my clinic that have been under treatment by this means, but it is the record of two of the more interesting, and I hope later to give a more thorough study of this method of treating this condition.

315 South Eighteenth Street.

GUAIACOL AS AN ANTIPYRETIC IN TYPHOID FEVER.

By James Stratton Carpenter, M.A., M.D., Pottsville, Pa.

GUAIACOL, as a substitute for creosote, has been employed very generally in pulmonary troubles. It is, however, within a comparatively recent period that it has been used epidermatically for its antipyretic effect in continued fever; and, as no reliable results of its action under these conditions have thus far been published, I have thought it not undesirable that my recent experience with it during an outbreak of typhoid fever should be brought to the notice of the profession. I have used the word "reliable" advisedly, since whatever reports of the action of guaiacol have come to my notice, through the various contributions to medical magazines, have either been half-hearted suggestions as to its employment to combat high temperature, or so discouraging as would deter the majority of their readers from its use altogether, through fear of producing disastrous collapse. The testimony I have to offer is, then, valuable in a double sense, being both positive in its declaration of the undoubted aid we possess in this drug towards the reduction of high temperature, and also attesting the fact that whatever unpleasant symptoms may arise from its use need not be considered, under proper care, as tending to more than temporary discomfort, while necessary attention to the simplest rules of nursing will avoid them altogether.

During the months of November and December, 1894, and the greater part of January, 1895, a large number of cases of typhoid fever came under my care in the little borough of Mount Carbon, about one mile south of Pottsville. The outbreak comprised some sixty cases of the disease, about forty of whom were in my own immediate hands. It is not my purpose here to enter into the details of that outbreak, which I hope to describe in a later paper; but it will suffice to say that, seeing the urgent necessity for careful nursing and better accommodations than the stricken people could themselves provide, steps were taken to procure trained nurses from Philadelphia, who were placed directly in the homes of the patients themselves; while, a little later on, an emergency hospital was instituted, and all who could or were willing to be moved were transferred there, and their treatment continued under more favorable auspices than was possible in their own dwellings.

It was at this time that the employment of guaiacol to combat fever suggested itself to me, and I gave it a most exhaustive trial. There were some very desperate cases of typhoid fever: the cause of infection was the pollution of well water, and the contamination by this water of milk spread the disease. There was not a single case where the infected milk had not been employed for drinking purposes in the home, and wherever the route of that particular milkman extended, there the typhoid disease showed itself. So plainly was this evident, that soon no one would take milk from the suspected milk depot, and not only was the milkman's occupation gone, but the sale of his live-stock followed soon after. I have never

known an instance where cause and effect was so quickly demonstrated with such scientific exactness by such unscientific hands.

During the entire time of dealing with the outbreak at Mount Carbon I had another case of typhoid fever under my care in Pottsville, one which began very mildly, but which pursued a course of nine weeks before defervescence was finally secured, and developed many of the worst features of the disease. In the management of this case I had no "trained nursing" to render my labors less wearisome, or to alleviate the long hours of weariness for the patient by those many acts of kind attention which the mere mention of the term "trained nurse" so strongly suggests to us all. In this case, too, was guaiacol used, but too often without that care so needful for the avoidance of unpleasant symptoms, and on several occasions I was obliged to resort to energetic measures to bring about reaction from a state of collapse that I feared, in her exhausted condition, might prove disastrous. Let me give an instance. The husband of my patient, a young woman of twenty-eight years of age, was in railroad employ. Each night he watched by the bedside of his wife, and early each morning would go out on his daily trip that consumed a full twelve hours before his return. During the day the patient was cared for by a sister-in-law, who did the best she knew how, or an aged mother-in-law, whose strength was hardly sufficient for all the demands made upon it throughout the long day's care. On this particular morning I reached the bedside of my patient at nine o'clock, my usual hour, and found her in a most alarming condition of collapse. Her illness had begun five weeks prior to this time, with a temperature record for the three weeks immediately preceding of 104° F., and at times 105° F., during which period there was serious involvement of the intestinal tract. She was completely deaf from a double *otitis media suppurativa*, and not needing very much additional burden to prove it to be of that fabled character borne by "the last straw" to "the camel's back." It was under such conditions as these, and when the temperature at 5.30 A.M. registered 105° F., that the husband, prior to his early departure for his day's work, rubbed into the epigastric region 10 drops of guaiacol, and, without awaiting developments, left the patient to the care of his old mother, the sister-in-law, on this particular day, having left town for several days' sojourn among relatives. At 2 A.M. he had used 15 drops of guaiacol, the temperature then being 104° F., which lowered it to 102⅔° F., but by 5.30 A.M. it had reached the point noted when the second application was made. At 9 A.M., when I took her temperature, I found it 97⅜° F.; she was in a profound chill and had been feeling cold for over an hour; there had been several attacks of vomiting; the pupils were widely dilated; the pulse was small and rapid,—136 per minute,—and markedly dicrotic; the countenance was livid, and every evidence of profound exhaustion was present. In an hour's time, after using means to combat shock, the temperature had risen to 102⅜° F., and at 7 P.M. was only 103° F., when I ordered 10 drops more of guaiacol to be rubbed in, and at midnight the recorded temperature was 100° F., which result was obtained with free perspiration and entire absence of any unfavorable symptoms. I give this instance thus fully to show what, I believe, has been commented on by every one who has thus far observed its effects,—viz., that it is at times followed by some very unpleasant symptoms; but that even such alarming conditions as those I have noted need not be deemed an insuperable barrier to its employment is evident from my immediate use of it in this same patient, and without the least timidity concerning its action, feeling sure that, where absolute care is observed to prevent them, no chill nor collapse need be feared. On several subsequent occasions with this patient I had secured tremendous lowerings of temperature, which may be seen as follows:

December 26, 6 A.M., temperature 104⅘° F.; 20 drops of guaiacol in two doses,—8 drops at 6 A.M. and 12 drops at 8 A.M. At 10.15 A.M., temperature 103⅖°, 6 grains of phenacetin were given. At 1.30 P.M., temperature 97⅗°; no chill.

December 27, 8 A.M., temperature 103⅜° F.; 15 drops of guaiacol were rubbed in. At 10 A.M., temperature, 101°. At 12 M., temperature 102°, and at this hour 15 drops of guaiacol were used. At 3 P.M. the temperature was 95⅘°, and a chill resulted, of course. This was again due to absolute carelessness, and, after the collapse which followed this employment of the guaiacol, I substituted phenacetin as a safer remedy for this particular case.

The marked contrast which this case presents to the others, where, under the care of my trained nurses, guaiacol was very freely used without ever producing even the slightest chill, gives cause for inquiry as to the different results obtained; nor is there difficulty in arriving at the proper determination. With careful nursing, guaiacol should have no terrors when employed as an antipyretic, even in the most exhausted conditions; and from a study of the case de-

tailed above, where such profound collapse was induced on several occasions, it will be seen that even "alarming symptoms" were quickly dissipated by appropriate treatment, and that the danger was, possibly, more fancied than real. If we may, then, eliminate the element of danger, guaiacol, as an antipyretic in *all* fevers of sthenic or asthenic type, should be largely employed, since not only its method of employment, but also the readiness of its application, render it a most desirable remedy in the diseases in question, where the debilitating effect of high temperature upon the cardiac muscle presents itself as the chief problem for our consideration. Antipyretics have always been a necessity in fevers, and each new one has had its zealous advocates, as being "entirely free from all unpleasant features;" but even with phenacetin or acetanilide I have had alarming symptoms present themselves; so that, until my recent experience with guaiacol, I have never used any of this class of remedies without considerable anxiety as to their possible weakening effect upon the heart muscle. Armed with that experience, I think I may safely say that guaiacol has no dangerous qualities when used with ordinary care, and with the observance of those precautions which will naturally suggest themselves to each careful observer. It lowers temperature to the extent of several degrees as a usual result; but I have seen several falls of temperature of from five to seven degrees within a few hours from employing the remedy. The dose is given as from 20 to 30 drops when topically used, but the latter I have found unnecessarily high, 20 drops at the most being necessary, and often I have obtained with a dose of 10, and even 5, drops effects that have not been exceeded by the use of larger doses. Guaiacol when thus employed is very quickly followed by a fall in temperature, this fall being generally preceded by a perspiration more or less profuse. It is in this stage that the liability to a rigor is greatest, and I made it a rule to have my patient between blankets, and, if the temperature fell to 100° F., to use still further precautions against a chill, such as spongings with hot alcohol and the use of hot-water bags.

A fall of temperature does not always occur after one application of the drug, and if, after two hours, no results are obtained, a second application may be made. In some instances I have followed up the results obtained from guaiacol with a 5-grain or 10-grain dose of quinine with good effect, or have used from 3 to 6 grains of phenacetin as an adjunct to the drug, and have effected a greater reduction of temperature than would probably have resulted from the guaiacol alone; but it is generally better, after perspiration manifests itself, which usually occurs in about thirty minutes after the application has been made, to await further developments, and not repeat the application before an interval of two hours has elapsed, should the first dose have yielded only negative results, and even then a much smaller dose than that originally employed will sometimes give a surprising lowering of temperature. In this connection let me give the following records of results obtained in a few of the cases that occurred during the Mount Carmel epidemic. It must be remembered that I had never previously used the drug, and that it had never been employed by any of the trained nurses prior to their coming to Pottsville, so that I was able to give it a fair trial without any prejudices either for or against its employment.

CASE I.—Patrick McG., aged fifty years, laborer. Duration of fever six weeks, characterized by great exhaustion and threatened peritoneal inflammation. The guaiacol was employed about the fifth week, and with excellent results. He did not seem able to tolerate the cold spongings, which generally produced sensations of chilliness afterwards, and sometimes a severe rigor would result. The guaiacol was in his case not only a great relief to his feelings, but never resulted in any unpleasant conditions due to the reduction of temperature.

December 2, 6 P.M., temperature 104° F.; guaiacol, 20 drops. At 8 P.M., temperature 101⅘°.

December 4, 9 P.M., temperature 103⅘° F.; guaiacol, 20 drops. At 11 P.M., temperature 98⅘°.

December 7, 9 P.M., temperature 102⅘° F.; guaiacol, 30 drops. At 10 P.M., temperature 101°. At 10.30 P.M., temperature 99⅜°. At 1 A.M., temperature 99°.

December 8, 9 P.M., temperature 102° F.; guaiacol, 10 drops. At 10 P.M., temperature 101⅖.

December 9, 9 A.M., temperature 99⅘° F. At 1 P.M., temperature 101⅕°; guaiacol, 20 drops. At 3 P.M., temperature 99⅖°.

No further employment of the guaiacol was made after this date, as the temperature only on two occasions rose above 101° F., and then fell to normal line. Convalescence undisturbed.

CASE II.—Margaret McC., single, aged thirty years. This patient had been a "walking patient" for one week before I was called in to see her, the first record of temperature being 104° F. and ataxic phenomena being well de-

veloped. She lay in the midst of dirt and unwholesome conditions, the room poorly ventilated, cold, and absolutely barren of any comfort. The opening of the emergency hospital was the greatest boon to her, and, despite the desperateness of her condition, I determined upon her removal at the earliest possible moment, well asssured that she could never get well at home. In spite of every care that could be exercised in transporting her to the hospital building, half a mile distant, she developed a severe chill on her arrival, and her temperature reached 107° F. at 2 P.M. Phenacetin, quinine, and whiskey effected slight reduction of temperature, but it needed only 20 drops of guaiacol to bring it completely under control, as the record shows.

November 28, 2 P.M., temperature 107° F.; phenacetin, 5 grains, quinine, 10 grains. At 4.20 P.M., temperature, 105⅕°; guaiacol, 20 drops. At 4.45 P.M., temperature 103⅕°. At 6 P.M., temperature 100⅜° (10 grains of quinine were given at 6 P.M. to counteract tendency to chill); at 7.20 P.M., temperature 99⅘°.

November 29 and 30, temperature kept between 99° and 101⅘° F., and no antipyretic was used until nearly noon of the 30th.

November 30, 11 A.M., temperature 102° F.; 15 drops of guaiacol were used, and a gradual fall of temperature occurred until 11 A.M. of December 1, when it reached 100° F. At 5 P.M. it had reached 103⅜° F., but light spongings were used from that time until 11 A.M. of December 5, before the guaiacol was again used, the temperature never being higher than 102° F. all that time.

December 5, 11 A.M., temperature 103⅕° F.; guaiacol, 20 drops. At 1.30 P.M., temperature 101½°. At 7 P.M., temperature 103⅜°; guaiacol, 30 drops. At 11 P.M., temperature 102°.

December 6, 5 A.M., temperature 100⅘° F. At 7 A.M., temperature 99⅘°. At 8 A.M., temperature 99°. At 10.30 A.M., temperature 101⅘°; guaiacol, 10 drops. At 11.30 A.M., temperature 101⅘°. At 1 P.M., temperature 103°; guaiacol, 10 drops. At 2.30 P.M., temperature 101⅕°.

December 7, 5 A.M., temperature 102⅕° F.; guaiacol, 15 drops. At 8 A.M., temperature 98°. At 11 A.M., temperature 103⅜°; guaiacol, 10 drops. At 2.30 P.M., temperature 99°. At 8 P.M., temperature 102⅕°; guaiacol, 20 drops. At 10 P.M., temperature 100⅛°.

December 8, 1.30 A.M., temperature 102⅜° F.; guaiacol, 20 drops. At 2.30 A.M., temperature 100½. At 8 A.M., temperature 99⅜°. At 11 A.M., temperature 98⅜°. At 5 P.M., temperature 100⅜°; guaiacol, 10 drops. At 8 P.M., temperature 101°.

The subsequent history until December 28 was a continuation of the above routine. Several complications occurred; a phlebitis of the left femoral vein, and several axillary glands breaking down into abscess formation retarded her convalescence. On December 28 guaiacol was used for the last time, temperature falling four degrees after rubbing in 15 drops, and never rising over 100° F. after that date.

CASE III.—Katie P., single, aged twenty years; was a type of robust, healthy girlhood. Like many others who were victims of this epidemic, she did not give up to the disease until compelled to from sheer exhaustion. When she finally was brought to bed, I was treating her mother, a small brother, and two of her sisters in a poorly ventilated, damp, ill-situated house, whose only redeeming feature was its cleanliness. They were all removed to the hospital without incident, and all recovered. The bronchial disturbance in her case was the only alarming condition, so that I shall simply append the record of the guaiacol treatment without comment.

December 4, 1 P.M., temperature 103⅜° F.; guaiacol, 20 drops. At 2 P.M., temperature 101½°. At 10 P.M., temperature 103⅜°; guaiacol, 20 drops. At 12 M., temperature 99⅜°.

December 5, 5 A.M., temperature 103⅘° F.; guaiacol, 30 drops. At 6 A.M., temperature 99⅜°. At 4.30 P.M., temperature 102⅜°; guaiacol, 20 drops. At 10.30 P.M., temperature 101⅜°.

December 6, 1.30 A.M., temperature 104° F.; guaiacol, 20 drops. At 2 A.M., temperature 102°. At 5 A.M., temperature 100⅜°. At 8 A.M, temperature 104°; guaiacol, 25 drops. At 9 A.M., temperature 100½°. At 1 P.M., temperature 104½°; guaiacol, 25 drops. At 2.30 P.M., temperature 101⅜°.

December 7, 11 A.M., temperature 103⅜° F.; guaiacol, 15 drops. At 1 P.M., temperature 101⅜°. At 2.30 P.M., temperature 99⅜°. At 4.15 P.M., temperature 102½°; guaiacol, 20 drops. At 5.20 P.M., temperature 99⅜°. At 9 P.M., temperature 103⅕°; guaiacol, 20 drops. At 10 P.M., temperature 101°.

December 8, 1 A.M., temperature 99° F. At 5 A.M., temperature 98⅜°; At 11 A.M., temperature 102⅜°; guaiacol, 10 drops. At 2 P.M., temperature 99⅘°. At 5 P.M., temperature 103½°; guaiacol, 10 drops. At 5.30 P.M., temperature 101⅜°. At 6 P.M., temperature 99½°. At 8 P.M., temperature 97⅜°. At 11 P.M., temperature 104°; guaiacol, 15 drops.

December 9, 1 A.M., temperature 101⅜° F.

At 5 A.M., temperature 100⅕°. At 8 A.M., temperature 102⅕°; guaiacol, 10 drops. At 11 A.M., temperature 98⅖°. At 2.30 P.M., temperature 103⅘°; guaiacol, 10 drops. At 4 P.M., temperature 101⅗°. At 5 P.M., temperature 102°; guaiacol, 10 drops. At 7 P.M., temperature 99°. At 11.30 P.M., temperature 102⅘°; guaiacol, 10 drops.

December 10, 5 A.M., temperature 101⅗° F. At 9 A.M., temperature 99⅕°. At 5.30 P.M., temperature 102⅖°; guaiacol, 10 drops. At 11 P.M., temperature 98°.

December 11, 2 A.M., temperature 101⅖° F.; guaiacol, 5 drops. At 10 A.M., temperature 99⅘°.

December 12, 3.30 P.M., temperature 102° F.; guaiacol, 5 drops.

December 13, 11 A.M., temperature 99⅕° F.

CASE IV.—William J., aged thirty years, married. This patient illustrates to a certain extent less favorable effects of guaiacol in the reduction of temperature, but it was interesting as showing the triumph of strict antipyretic methods over most trying conditions; and, although the patient finally succumbed to "the results" of his long illness,—a tubercular infiltration at the base of the brain,—an almost afebrile condition had been secured for some days prior to this unfortunate event, and his recovery had seemed assured. The patient was a brakeman, who, for one week before going to bed, had continued at his employment, although complaining of all the symptoms of the typhoid disease, his temperature registering 103⅘° F. at my first visit. This patient's child, a little boy six years of age, began complaining about the same time, and his mother brought him in from the street to have my opinion. His temperature was 104⅖° F., and father and child were soon in the only bed available, each vigorously protesting against the necessity for such unlooked-for proceedings. The course of the fever was uneventful for the ensuing two weeks, excepting for the high temperature maintained and the slight inconvenience it seemed to occasion the invalids. Phenacetin, cold spongings, and simple measures for controlling temperature were employed without much response, until, on November 27, the father's temperature reached 103⅜° F., while that of the child had fallen to 98⅘° F., just three weeks from the time the first symptoms had manifested themselves. Pneumonia set in at this juncture, extending through both lungs, and, although the guaiacol had been employed for several days prior to the occurrence of this complication with good effect, maintaining the temperature at 100° F., it now became necessary to employ other means to reduce fever, which are shown in the records of the case. Quinine in large doses was administered, and the ice-pack was frequently resorted to when cold spongings and the wet pack failed to lower temperature. Through this most trying period I was employing, of course, the carbonate of ammonium, strychnine, digitalis, and alcohol, and on December 8, for the first time, the temperature reached the normal point. The effusion into the brain, which occurred one week later on, was a most disappointing termination, however unavoidable. The record follows:

November 27, 2 A.M., temperature 103⅜° F.; guaiacol, 20 drops. At 10 A.M., temperature 100°. At 1.30 P.M., temperature 103°; guaiacol, 20 drops. At 4 P.M., temperature 104⅖°. At 6 P.M., temperature 103⅜°; guaiacol, 20 drops. At 9.30 P.M., temperature 104⅘° (cold wet pack employed for thirty minutes, and ice-water sponging during this time). At 11.30 P.M., temperature 103°, and 20 drops of guaiacol were used.

November 28, 1.30 A.M., temperature still 103° F., when patient was sponged with ice-water in a cold pack for thirty minutes. At 2.30 A.M., temperature 101⅖°. At 11.30 A.M., temperature 102⅘°; guaiacol, 20 drops. At 1 P.M., temperature 101°. At 4 P.M., temperature 104⅜°; guaiacol, 20 drops. At 4.20 P.M., 20 grains of quinine in 2 fluidounces of spts. frumenti were given. At 6 P.M., temperature 103⅜°. At 7 P.M., temperature 97°. At 8 P.M., temperature 102⅖°; guaiacol, 20 drops. At 10.30 P.M., temperature 101⅖°. At 12 M., temperature 101⅖°; guaiacol, 20 drops.

November 29, 2 A.M., temperature 98⅘° F. At 9 A.M., temperature 103°; quiniæ sulph., 10 grains. At 11.45 A.M., temperature 101⅘°. At 1.30 P.M., temperature 102⅖°; guaiacol, 20 drops. At 5 P.M., temperature 101⅗°. At 7 P.M., temperature 102⅜°; 20 grains of quin. sulph. in ½ fluidounce of spts. frumenti. At 11 P.M., temperature 101°.

November 30, 9 A.M., temperature 100° F. At 4.15 P.M., temperature 102⅖°; guaiacol, 20 drops. At 5.30 P.M., temperature 101⅘°. At 6.30 P.M., temperature 100⅘°. At 7.30 P.M., temperature 103⅖°; quin. sulph., 20 grains, and ice-water sponging for thirty minutes. At 9 P.M., temperature 101⅘°.

December 1, 7 A.M., temperature 100⅖° F. At 2.30 P.M., temperature 101⅘°; guaiacol, 6 drops. At 8.30 P.M., temperature 99°.

December 2, 5 P.M., temperature 103⅘° F.; guaiacol, 15 drops. At 9 P.M., temperature 101⅜°.

From December 3 to December 7 the ice-pack alone was used to combat temperature.

December 7, 9 P.M., temperature 102⅜° F.; guaiacol, 15 drops. At 11 P.M., temperature 102°.

December 8, 5 A.M., temperature 98⅜° F. At 9.45 A.M, temperature 104⅛°; guaiacol, 10 drops. At 10 A.M., temperature 102°. At 11.45 A.M., temperature 101¾°; guaiacol, 10 drops. At 2 P.M., temperature 97°.

From this point on until the 14th promixo the temperature remained under fair control, the lungs cleared up, excepting at the apices, where consolidation was marked, and evidences of a chronic pneumonitis remained. The pulse became irregular, and on December 15 the patient died, after twenty-four hours of endeavor to overcome the cerebral congestion, which set in on the afternoon of the previous day, and of which the pulmonary conditions plainly attested to the tubercular character.

CASE V.—Mary R., aged sixteen years. A very nervous girl, whose mother succumbed to the disease after a severe attack, extending through six weeks, complicated with peritonitis. In the daughter's case the same complication threatened, but was happily averted. This record is valuable, as showing the effect of every dose of the drug, from that of 5 to the maximum of 35 drops.

December 6, 3 A.M., temperature 103⅜° F.; guaiacol, 20 drops. At 3.30 A.M., temperature 101⅜°. At 9 A.M., temperature 103⅛°; guaiacol, 20 drops. At 11 A.M., temperature 100⅜°. At 8.30 P.M., temperature 105°; guaiacol, 20 drops. At 10 P.M., temperature 102⅛°. At 12 M., temperature 103⅛°; guaiacol, 20 drops.

December 7, 1.40 A.M., temperature 100° F. At 11 A.M., temperature 103°; guaiacol, 20 drops. At 1.30 P.M., temperature 101°. At 3 P.M., temperature 105⅛°; guaiacol, 30 drops. At 4.30 P.M., temperature 102⅜°. At 7.30 P.M., temperature 104⅜°; guaiacol, 20 drops. At 8.30 P.M., temperature 102⅜°. At 9 P.M., temperature 105⅜°; guaiacol, 20 drops. At 11 P.M., temperature 101⅛°.

December 8, 1 A.M., temperature 105° F.; guaiacol, 15 drops. At 2 A.M., temperature 100¼°. At 5 A.M., temperature 98⅜°. At 8 A.M., temperature 104⅜°; guaiacol, 15 drops. At 9 A.M., temperature 102⅛°. At 11 A.M., temperature 98⅜°. At 2 P.M., temperature 104°; guaiacol, 20 drops. At 3 P.M., temperature 101⅜°. At 5 P.M., temperature 104⅛°; guaiacol, 15 drops. At 6.30 P.M., temperature 100⅜°. At 8.30 P.M., temperature 98⅜°. At 11.35 P.M., temperature 104⅜°; guaiacol, 5 drops.

December 9, 1 A.M., temperature 103° F. At 3 A.M., temperature 104°; guaiacol, 30 drops. At 5 A.M., temperature 100⅜°. At 8 A.M., temperature 105°; guaiacol, 25 drops. At 11 A.M., temperature 98°. At 5 P.M., temperature 105°; guaiacol, 15 drops. At 7.30 P.M., temperature 101⅛°.

December 10, 2.50 A.M., temperature 103⅛° F.; guaiacol, 10 drops. At 3.50 A.M., temperature 102°. At 2 P.M., temperature 104⅜°; guaiacol, 20 drops. At 3 P.M., temperature 102⅜°. At 5 P.M., temperature 104°; guaiacol, 35 drops. At 6.30 P.M., temperature 102°. At 8 P.M., temperature 99¼°. At 12 M., temperature 103⅜°; guaiacol, 20 drops.

December 11, 1.30 A.M., temperature 101⅜° F. At 3 A.M., temperature 98⅛°. At 8 A.M., temperature 102°; guaiacol, 15 drops. At 10 A.M., temperature 100⅛°. At 6.45 P.M., temperature 104°; guaiacol, 25 drops. At 8 P.M., temperature 100⅜°. At 11 P.M., temperature 102°; guaiacol, 10 drops. At 12 M., temperature 101°.

December 12, 3 A.M., temperature 99⅛° F. At 4 P.M., temperature 103°; guaiacol, 10 drops. At 5 P.M., temperature 101⅜°. At 6 P.M., temperature 99°. At 8 P.M., temperature 97⅜°. At 12 M., temperature 103°; guaiacol, 20 drops.

December 13, 1 A.M., temperature 101° F. At 2 A.M., temperature 97⅜°. At 10.30 A.M., temperature 101¼°; guaiacol, 8 drops. At 12.30 P.M., temperature 100⅜°. At 2 P.M., temperature 102⅛°; guaiacol, 10 drops. At 3 P.M., temperature 100°. At 4 P.M., temperature 98°. At 7 P.M., temperature 102°; guaiacol, 20 drops. At 8 P.M., temperature 97⅜°.

December 14, 2 A.M., temperature 102⅛° F.; guaiacol, 10 drops. At 8 A.M., temperature 100⅛°. At 12 M., temperature 103°; guaiacol, 10 drops. At 12.30 P.M., temperature 101°. At 2.30 P.M., temperature 100°.

December 15, 2.30 P.M., temperature 101¼° F.; guaiacol, 7 drops. At 4 P.M., temperature 99°. At 5 P.M., temperature 97°.

The further conduct of this case was interrupted by an attack of erysipelas, from which she recovered nicely.

If we sum up the important features of this employment of guaiacol as an antipyretic in typhoid fever, we observe the following facts:

1. While any portion of the cutaneous surface may be selected as a site for the topical use of the drug, the epigastrium was invariably chosen in my series of cases. In some of the patients the continued application was followed by quite a dermatitis, but this was exceptional. The rubbing-in process completed, a layer of

cotton was held in place over the spot, and within half an hour the effects of the application would generally begin to manifest themselves in a more or less profuse perspiration, followed by an appreciable fall of temperature, which, from the records given, was followed by a rise within varying periods of time.

2. *Dosage.*—Thirty-five drops was the maximum dose employed, and on the few occasions it was used, always accomplished a satisfactory lowering of temperature; but it was only used after a less amount of guaiacol had failed to secure the desired end. It would seem to be a fair deduction from my experience with it, that a dosage of fifteen to twenty drops yield, in most instances, as satisfying a reduction of temperature as may be expected from larger doses; but when no lowering of temperature results from these amounts, then the dosage at each successive application should be increased until a notable fall occurs. In other words, when the temperature is hyperpyretic in character, use the maximum dose at the outset (30 or 40 drops); when the fever does not exceed 103° F., a lessened dose will be productive of equally satisfactory effect.

3. *Frequency of Employment.*—I place no limit to the employment of this remedy as an antipyretic in typhoid fever, excepting where, as in the case of Mrs. T., necessary precautions against the occurrence of a chill are not observed, because the rise in temperature consequent upon that condition was always several degrees higher than the point whence the fall began, and was productive of so much distress to the patient. There need be absolutely no fear of dangerous collapse from the use of guaiacol when employed under the conditions obtained from good nursing, as the cases quoted by me in this paper testify. No selection of a robust type of patients was made on which to employ the drug, and it will certainly be granted that no more unfavorable cases could have been chosen, where depression was to be feared as a possible result of the drug action, than Cases II. and IV. Urgency of symptoms must be our guide in the frequency of employment of guaiacol. When one application fails to effect reduction of temperature after a period of two hours has elapsed, a second one may be made; but, under these circumstances, a reduced dose will generally effect as much lowering of body heat as is desirable.

4. As adjuncts to this employment of guaiacol, I have made use of quinine, phenacetin, alcohol, and cold water; but observation has shown the best results to have been obtained from the last named when used in conjunction with guaiacol. Time and again, where one alone has failed utterly to affect the high temperature, the two in combination have accomplished most gratifying results. In the case of William J., when the pneumonic conditions grafted on to the exhausted system threatened a sudden termination to the case, the conjoined action of guaiacol and extreme cold were alone successful in overcoming most dangerous situations. And in all the cases where it was employed (guaiacol), light spongings were very successfully used to maintain the reduction effected by the drug. This is particularly exhibited in Case II., where for several periods, extending over several days, only light spongings were employed, and this in the face of a temperature on November 28 of 107° F.

As to the method of elimination of guaiacol from the system, I have no data to give, as investigations on this point, other than superficial ones, could hardly be carried out. No complaints as to the taste of the drug were made by the patients that I now recall, nor was any odor of the breath or of the urine noted by the nurses. I cannot close my remarks on this subject, however, without expressing my indebtedness to their careful observations, both of temperature and times of using the guaiacol, without which much valuable information on the subject-matter of this paper would have been wanting altogether. In another paper, relating to the history of this epidemic, which I hope to publish later on, some additional points bearing on the use of guaiacol will be furnished.

SOME CRITICAL OBSERVATIONS ON THE TREATMENT OF ACUTE LOBAR PNEUMONIA, WITH A VIEW OF BRINGING ABOUT A MORE DEFINITE AND RATIONAL TREATMENT.

By F. Gundrum, M.D., Escondido, Cal.

(Concluded from page 306.)

HAVING gone somewhat extensively into the question of the dynamogenetic effect that may be produced by the application of cold water, in both health and acute febrile diseases, but more especially in pneumonia, I will now return to the antithermic side of the subject.

The accompanying pyrexia of pneumonia is unquestionably, next to the toxic agent, the greatest danger, and sometimes it even exceeds this, becoming the chief danger to life.

"External heat applied to the body of nor-

mal animals, so as to elevate the temperature, produces derangements of the nervous function of the circulation and respiration, precisely like those seen in thermic fever, the intensity of the disturbance being directly proportionate to the rise of the temperature. . . . When a dog, cat, or rabbit is shut up in a box, heated either by the sun's rays or by artificial means, the temperature of the animal rises, and at the same time the pulse-rate becomes, *pari passu*, more rapid, the breathing grows more and more hurried, the restless, uneasy movements of the victim show the general distress it is suffering. As the temperature increases the nervous disturbance becomes more and more apparent, and stupor, coma, partial paralysis, convulsions, and finally death. . . . I have placed a man whose temperature was nearly 110° F., who was unconscious, with a feeble running pulse of 160 or 170, irregular, jerking, slow respiration, and every indication of immediate death, in a bath of 60° F., and within a minute and a half have seen consciousness partially restored, and in another minute and a half the man trying to get out of the bath. What could the bath do to affect the man so profoundly and so quickly but withdraw the heat? That the heat was present and that it was withdrawn the thermometer proved. If the drowsiness had been due to simple congestion of the brain, very certainly would the bath, by driving the blood from the surface, have increased the trouble. . . . Similar instances of the good effects of the sudden withdrawal of heat in rheumatic hyperpyrexia have been recorded by English and German observers, and recent Continental literature is full of reports of the relief of nervous symptoms in various pyrexias by the abstraction of heat. . . . Threatening life, the heat should be withdrawn as rapidly as possible by means of the cold bath." (H. C. Wood.)

The above-quoted observations have been verified by many other experimenters and clinicians, and must be accepted as incontrovertible facts. If "acute pyrexia or caloric in excess acts as a direct poison on the body, and the phenomena of acute fever are largely due to the heat itself," *we find ourselves confronted in pneumonia by two poisons*,—the one already referred to, some toxic agent as a result of the infection, and excessive caloric. The toxic agent, we have seen, expends itself on the nervous system by enervating it, and by a paralytic action on the respiratory and cardiac centres. On what part of the system does the second poison expend itself? Exactly on the same as the first. The poisonous action of excessive caloric or pyrexia enervates the nervous system generally; it inhibits the production of dynamic energy, but more particularly of the respiratory and cardiac motor centres. If it is a fact, and I think this is clearly proved and admitted by the great majority of the profession, that the febrile condition attending pneumonia is an element of great danger by helping to paralyze the heart, then it must also be true that any treatment which has not the specific purpose of keeping down the temperature where it can do very little or no harm is irrational and unscientific.

The importance of keeping the temperature in abeyance in pneumonia has been recognized for a long time, and various agents have been brought into use, from time to time, to accomplish that purpose. Schoenlein, Wunderlich, and Traube, of Germany, extolled the antipyretic effects of digitalis to the skies. M. Hirtz carried the glad tidings to France, where it soon came into general use. But it had its day as an antipyretic remedy, and passed away. Quinine, under the influence of the teachings of such eminent teachers and writers as Liebermeister, Jürgenson, Flint, Loomis, and others, obtained extensive use. I used it very liberally myself. Latterly, the coal-tar remedies have been used extensively, only to soon share the fate of their predecessors. The only one of all the foregoing remedies that I feel called on to notice seriously is quinine.

Loomis ("Pepper's System") says of quinine in the treatment of pneumonia, "Theoretically, therefore, it is a remedy *par excellence* for the lowering of temperature in this disease, and clinically and empirically it has been found to reduce temperature more permanently and with greater certainty than any other agent. None of the objections brought against the other antipyretics can be urged against this one, for it possesses the twofold power of reducing the temperature and sustaining the heart power from its action on the nervous system. To act antipyretically, quinine must be given in large doses. From 20 to 30 grains must be given within two hours, or the whole quantity may be given at a single dose." This is high praise indeed, and, coming from such a source, it has no doubt had a great influence with medical practitioners of this country. But no teaching was ever more fallacious or harmful. I administered quinine in antipyretic doses for a number of years, not only in pneumonia, but in other acute febrile diseases. I did not only prescribe it, but took it myself. While it is true that quinine will reduce the temperature when given in large doses, it is also true that in such doses it has a toxic action on the nervous sys-

tem that produces a more or less profound enervating influence. I have seen cases so profoundly affected that the nervous system never recovered its former healthy standard. Quinine in antipyretic doses is a direct cardiac depressant. I cannot give my ideas more clearly than by quoting H. C. Wood: "The evidence is conclusive that both in man and the lower animals, quinine, in sufficient amount, is a powerful depressant to the heart, to the heart-muscle, or ganglia." And yet I believe quinine, of all the antipyretic remedies, when judiciously used and only as an aid to heat abstraction, is the safest and best, and may be made to do good service in properly selected cases.

As no antipyretic agent which has a depressing effect on the respiratory and cardiac motor centres should ever be used in the treatment of pneumonia, we have but one agent left us that will accomplish our purpose with safety to the patient, and that agent is cold water in some form or other. It is the only agent that will abstract the heat and also at the same time innervate the nervous system and increase the dynamic force of the respiratory and cardiac motor centres.

And why has this agent found so little favor with the profession as a therapeutic measure in the treatment of pneumonia?

There are several good reasons. Among others may be mentioned the fact that the student, in his collegiate course in the majority of the institutions of this country, receives absolutely none or, at most, very little instruction as to the physiological action, therapeutic indications and results, or instructions as to the methodical use of cold water in different temperatures. Medicinal substances receive their full share of attention. Their physiological action on the lower animals is carefully studied, their therapeutic indications and contraindications are painstakingly pointed out, and their therapeutic triumphs are set forth with exultation. And while in recent years more attention has been paid to the treatment of febrile conditions in some of the hospitals and by a very few practitioners, by the abstraction of heat, among the great majority of physicians it is utterly ignored as a therapeutic measure.

Another reason given by many physicians is the opposition they meet from the laity. This is true to a considerable extent, and no one is more to blame for it than physicians themselves.

A practitioner who undertakes to treat a patient with a remedy of whose physiological action he is ignorant, of whose therapeutic indications he has no clear conception, and of whose methodical application he has but a smattering knowledge, is sure to do harm, if he don't kill his patient.

Another reason given by physicians is, that in general practice hydriatic treatment is out of the question, on account of the lack of appliances, properly instructed nurses, the loss of time to the physician, and the great disturbance of the patient, who, it is claimed, should have absolute rest.

The most serious reason given by many physicians why the reduction of temperature by cold applications should not be resorted to is, that contracting the capillaries and arterioles in the surface tissues would suddenly produce a fluxion to the central organs, and by throwing a great additional burden on the heart, might produce sudden death by bringing on heart-failure.

This condition of things can certainly be brought about by one who lacks all knowledge of the condition of his patient and the nature and effects of the remedy.

The only valid reason why a pneumonic patient should never be subjected to hydriatic procedure is on account of the lack or insufficient knowledge of the medical attendant. There is no remedy that is so harmless, when intelligently used; there is no remedy whose effects can be so varied, and can be so nicely and easily regulated from an almost imperceptible to a most powerful effect. With it we can actually raise the body heat, either in the normal or pyrexial state, by powerfully stimulating the heat-centres, so that the production of heat is greater than the loss. We can abstract the heat rapidly or slowly, as we wish; we can abstract it in such a manner as to make its effects last a longer or shorter time. We can abstract the heat without producing any, or very little, excitation of the nervous system, or we may have the heat-abstracting principle at a minimum but the dynamogenetic influence at a maximum. Now, I ask in all candor, have we in any one remedy among medicinal agents, or in any combination of them, such wonderful therapeutic qualities. If any of my readers think that the proper hydriatic treatment of pyrexia consists in sticking the patient into a tub of water,—into a full bath,—at a temperature of exactly 65° F., and leaving him there exactly fifteen minutes, as is done in some of our large hospitals, regardless of the age, sex, temperament, mental, physical, or clinical condition, they think differently than I do. Hydriatic treatment can be carried out in many different ways. I have treated many cases successfully and satisfactorily without ever using the bath-tub at all.

We can use the pack entire or in sections. We can make a bath-tub out of eight or nine feet of oil-cloth put under the patient. We can use a cheap canvas bath-tub. We need never refrain from using hydriatic treatment because we have no bath-tub. This treatment should never be denied a patient suffering from a pyrexia which endangers his life, on account of its extra trouble and care. The prime object of the physician should be to save the patient's life, and any extra trouble is only a secondary consideration. I know very well from experience that the proper carrying out of this treatment in pneumonia is much more troublesome than to write a prescription or leave a few drops of aconite, veratrum, or some other drug, but I also know that the results to the patient and his friends will be much more cheerful and the reputation of the medical attendant much more satisfactory.

The full bath should seldom, if ever, be used in pneumonia. The temperature cannot be more effectually reduced than with the half bath of Priessnitz. We have very poor control of the neuro-exciting effect, and may shock a patient more or less than we wish to. The heart having its motor force more or less reduced may have too heavy a burden thrown upon it by driving the blood inward. We not only have the element of cold that contracts the capillaries, but we have also the pressure of the column of water added. We cannot carry on the friction of the surface, by which we are enabled to increase the circulation in the capillaries, thus protecting the internal organs from a sudden fluxion, bringing the superheated blood from the interior to the surface to part with its heat, and the cooled-off blood of the surface to the interior to part with its newly acquired cold.

By using the half bath we have everything under our entire control, and we can make it very comfortable for the patient. I usually double a sheet so that it will fit in the bottom of the tub, or, what is still better, a small woollen blanket. I weight it down, so that when the water is poured in it will not float. This may be considered superfluous. If any reader thinks so, let him try it only once, and he will soon see the great difference. Some soft cloth should be put under the head for a pillow. Enough water should be put into the tub to cover the body from half to two-thirds. The patient should now be prepared. The patient must have fully recovered from the chill and the whole body become warm, but especially the feet. No patient should ever take a cold bath with cold feet. If the temperature has reached 103° F. or over, the hydriatic treatment should begin; if the patient still has cold feet, they must be warmed up with artificial heat. To prevent the depressive effect on the circulation, thus producing internal congestion, the face, head, and neck should be well sponged off, and if we wish to take extra precautions, precede the bath by friction of the whole cutaneous surface. If we have a timid or delicate patient, we can put them into a bath of 90° or 80° F., that will not shock them,—the method so lucidly and forcibly described by Von Ziemssen. With thorough friction, we can soon reduce the temperature of the water by adding colder water to the bath, or by pouring it over the patient, without shocking him or doing any harm. If we wish to create dynamic force, the water may be 60°, 50°, or even 40° F., according to the effect we wish to produce. This can be still further controlled by the extent of surface it is poured over. The time of the bath should never be controlled by the watch in hand, but entirely by its effects. Having made the patient entirely comfortable, we may take our time. With vigorous and continual friction of all parts of the body, and this should be sufficiently active to give the skin a pink or red color, we have nothing to fear. The longer we are in abstracting the heat the longer it will be in returning.

If the patient is in a stupor or in a low delirium, we can make our cold affusions very cold, and let them come down from a considerable height, according to the exigency of the case. When the temperature is reduced to 99° or 98° F., the patient should be taken out, thoroughly wiped dry, and put to bed. In getting into the bath, while in the bath, and in getting into bed, the patient should never, under any circumstances, be allowed to make any muscular exertion.

If the patient's feet are cold after coming out of the bath, it is well to apply artificial heat.

I put my patients into bed, generally, without wraps of any kind. As soon as the temperature begins to rise, I begin the hydriatic treatment again. I take a linen sheet, or, if linen is not at hand, an old cotton sheet, fold it so as to make about four thicknesses and to reach from the pubis to the upper part of the chest and to the sides of the body where they touch the mattress. I wring this out of cold water as dry as possible (the temperature of the water may be anywhere from 60° to 32° F., according to the antithermic and dynamogenetic effect we wish), and put it on the patient. We can produce a smaller or greater

perturbing effect by laying the cloth on slowly or as quickly as possible.

If the temperature should show signs of rising rapidly, the limbs may be enveloped in cold cloths, or a pack may be put on the whole of the back. All these packs should be covered by some woollen material which should extend a few inches beyond the pack. Most any intelligent man or woman can soon learn to make these applications satisfactorily.

When the temperature rapidly rises under this process, the bath may be repeated.

By following this mixed hydriatic treatment we can greatly reduce the number of the baths, and where we have not plenty of good help this is quite an item. The pack by sections is a great improvement on the full-sheet pack, as we can carry out the treatment with very little trouble to the patient or taxing his strength by exertion.

When the principles of hydriatic treatment are thoroughly mastered, all difficulties vanish. Whenever the temperature goes to 103° F. in spite of my packs, I resort to the bath. In very many cases the temperature can be controlled by the packs, especially in such cases where the temperature is not inclined to run high or is easily controlled; in others only a few baths are needed during the twenty-four hours. The pack is especially useful during the latter part of the night. With the help of the natural fall of the body temperature it is enabled to keep the temperature down and by its secondary soothing effect to produce refreshing sleep.

In cases where the temperature runs a moderate scale, but the patient shows a marked adynamic tendency, and where we must aim at a dynamogenetic more than an antithermic effect, the cold full pack becomes invaluable. It is easily managed, the procedure need not fatigue the patient, and the effects can be regulated to a nicety. The patient is moved on one side of the bed, a woollen blanket is spread on the bed beside him, long enough to reach under his chin and twelve to fifteen inches below his feet. The sheet—a double sheet—is now wrung out of water of the desired temperature and spread out in such a manner that the patient can be lifted over and laid in the middle of it.

If the water out of which the sheet was wrung is very cold, the patient's face and neck should be bathed before putting him on the sheet. After having placed the patient on the wet sheet, it should be folded around him as quickly as possible, taking care to place folds of the sheet between the thighs, and arms and body. The blanket is now brought around him, great care being taken that the feet are well enclosed, and it should extend several inches above the sheet around the neck. When a change is desired, it can be made on the other side of the bed.

We have in the cold pack a powerful means to arouse innervation and to stimulate the respiratory and cardiac motor centres. The respirations at first are short, spasmodic, irregular, and superficial, but soon become slower, longer, and deeper; the nervous agitation is soon followed by a feeling of well-being and increased vivacity and energy. The heart, while at first it may be somewhat accelerated, soon beats slower and with greater force, and after reaction begins to come on, not infrequently the patient falls into a quiet, refreshing sleep. These packs can be repeated at frequent intervals, if necessary, and reaction comes on promptly and fully. However, if reaction is slow, we can hasten it by friction and artificial heat to the feet and limbs, or even to the body. As with the bath, no patient should ever be placed in the pack with cold feet or hands.

In concluding what I have to say on the great benefit that can be derived in the treatment of pneumonia by the abstraction of heat, I want to reassert my strong conviction that not only can we reduce the mortality to units, but we can shorten the disease and save many lives by preventing incomplete recoveries that soon fall a prey to phthisis pulmonalis.

The treatment of pneumonia by the application of ice to the chest-wall has been strongly advocated recently by a few practitioners, among the most prominent of whom, in this country, may be mentioned Dr. Mays, of Philadelphia. Dr. Mays, in several journal articles, has set forth his experience and results, and strongly urges the adoption of this method of treating pneumonia. His results certainly justify him in his efforts.

We should have some scientific or, at least, rational grounds or extended clinical experience for the use of any therapeutic agent or method of treatment. As there is a considerable difference between applying a hot poultice or an ice-bag to the chest in pneumonia, we should have some clear-cut ideas as to which one we should use. So let us briefly inquire into the condition of things, and see if that will give us any clue as to the remedy we should employ. I have already given my idea as to the pathology of the inflammation of the lung tissue, and it is not necessary to go over the ground again. Supposing we had such a condition on the surface,—in the mamma, for in-

stance,—who would hesitate to use the ice-bag to relieve the engorgement and exudation and limit the extension of the inflammatory process? No one except those who are ignorant of the power of the ice-bag to do this.

The power of cold to contract capillaries, arterioles, and even the larger arteries, is too well known to need any discussion. Even in acute inflammatory processes, where we can apply the ice-bag, we can often arrest the process in a short time; and where we are not so fortunate, we seldom fail to limit its extension and ravages. Now, the ice-bag will do exactly for the capillaries and arterioles in the lungs what it will do on the surface, if we can carry its influence deep enough.

The question of how deep we can cool off tissues has been much in controversy, but the experiments of Schultze, Volkers, and Zerssen, under the guidance of Esmarch, Fräulein Schlikoff, Winternitz, and others, have fairly and conclusively decided the matter. Schultze made his experiments principally on the abdominal cavity, and found that the abdominal organs could be lowered in temperature. Esmarch's experiments proved that thermometers introduced into the middle of amputated and resected limbs could be readily lowered. Fräulein Schlikoff experimented on nearly all the cavities of the body, including the pleural cavity. The thermometer was introduced into the pleural cavity through a fistulous opening, and in eight hours the temperature was reduced from 38° to 27° C. by the application of the ice-bag. Winternitz verified many of these observations.

These experiments and clinical observations have established the fact beyond a doubt that the lung tissue can be cooled off by the ice-bag. We can by its aid give tone to the distended and paralyzed vessels, limit the extension of the inflammation and lessen exudation there by relieving the strain on the right heart, assuage or arrest pain, and reduce temperature.

Theoretically, the application of ice to the chest-wall is based on sound physiological and pathological principles; therapeutically, no agent could have more rational grounds for its employment; and clinical experience, whenever it has been thoroughly and methodically used, has demonstrated its great value. While experience has taught me the great value of the ice-bag in the treatment of pneumonia, I am also convinced that we should be going too far to employ this treatment exclusively and deprive ourselves of other valuable curative means.

The application of ice to the chest in pneumonia is a very important therapeutic factor, especially in the first three or four days of the disease, in limiting hepatization and lessening exudation. By doing this it materially relieves the right heart. So far as its influence goes in reducing temperature, it can play but an indifferent part in the majority of cases, and as a dynamogenetic factor it plays a very minor part as compared with the cold bath, cold affusions, and the full pack; and, consequently, the treatment of pneumonia by the application of ice alone must always remain a partial treatment with incomplete results.

Have we any other remedies that will help us fortify the heart in its labors until the disease shall run its course?

Without a doubt, and the first on the list is digitalis. This agent has had many ups and downs for the last fifty years in the treatment of pneumonia. It has been given as a febrifuge, arterial sedative, and cardiac tonic. It has been given in minute doses and in large ones. Some have given it from the beginning of the disease, while others wait till the heart shows signs of failure. Teachers of equally high authority recommend it highly and condemn it.

When digitalis is used timely, properly, and judiciously, there is no drug that will increase the force of the heart so surely, continue its action for so great a length of time, and enable it to sustain a strain so safely. To wait with the administration of digitalis until the "crisis or period of strain" comes on—until the heart is giving way—is to court failure and bring the remedy into disrepute; and even when given thus late it is usually administered by way of the stomach, where it may lay for hours, instead of being given hypodermically, as it should be. But the greatest and most serious objection to waiting until we notice the heart flagging is, that the full tonic power of digitalis on the heart is not realized until from twenty-four to forty-eight hours, in which space of time the heart in too many instances succumbs to its burden and the patient goes to rest.

The time to begin the administration of digitalis is at the beginning of the disease, and continue it until the crisis is safely passed and the patient is on the safe road of convalescence.

Many patients—in fact, nearly all—object to the intensely bitter and peculiar taste of digitalis when given in infusion or the tincture or fluid extract is given in water. Some authorities will tell you to give it only in infusion, as it will not act so well in any other form. Others say

the same thing of the tincture or fluid extract. *The all-essential thing is to have a fresh and perfectly reliable article.* The infusion should, as a rule, not be given, as it necessitates the administration of too much water. I have usually employed the fluid extract, either given in water or capsules. The remedy should be given regularly once in three or four hours, day and night, and the quantity regulated according to its effects. And what effects should we obtain from digitalis to get the highest therapeutic results? The highest result is obtained when the heart will "fill itself most completely and empty itself most completely." It does this in a state of health. When we administer digitalis in typhoid fever or pneumonia in proper doses, we begin to get a fall in the pulse-rate, usually at the end of the second or the beginning of the third day. The pulse will remain, in the great majority of cases, regular, and gain in strength and force. But if we continue the same dose, by another twenty-four or forty-eight hours the pulse will become irregular, smaller, and feel harder under the finger. I have felt the pulse when it was 40 per minute from the use of digitalis, and it was very small, irregular, and wiry. What is the cause of this? As soon as the pulse shows irregularity, the diastole is no longer complete and perfect; the heart can no longer take in the fullest quantity of blood; the myocardium is acting spasmodically. This should never be allowed to occur. The pulse-rate should never be allowed to go below the normal.

We have in strychnine another medical agent that may render us signal service. It is attracting considerable notice recently in the treatment of pneumonia, some going so far as to consider it the only remedy that need attract our attention in the treatment of this disease. While this is not at all surprising, when we consider the history of other agents and methods, it is, nevertheless, to be regretted, and it will do its usual amount of mischief when thus employed. Strychnine, in my hands, has proved an invaluable remedy, but I have never used it exclusively or as a method of treatment, but only as a good commander uses his reserve force.

The physician who commences the treatment of pneumonia with strychnine starts out with his reserve force,—the most vehement, transitory, and the weakest. Strychnine is capable of developing nerve-tension to a high degree. This is especially true of the cardiac motor nerves. But it must be remembered that this tension cannot be kept up for an indefinite period. The higher we carry the tension the shorter its duration. Strychnine should be held as our reserve force,—a force which acts promptly and energetically. When we see that, in spite of our treatment, adynamia and heart depression manifest themselves, then is the time that strychnine will render us the greatest service. It should be used hypodermically, and the first dose a full one, after which sufficient should be given regularly to keep the system well under its influence.

I have also used caffeine to great advantage where strychnine could not be tolerated in sufficient doses.

Alcoholic drinks have occupied quite a prominent place in the treatment of pneumonia.

Under the leadership of Todd, Bennett, Flint, and others, and under the influence of their teaching, thousands of physicians, including myself, used alcohol freely, under the impression that we cured our patients by keeping up the flagging forces and stimulating the heart. Many are pursuing the same course today. Whatever peculiar idea physicians have as to the proper remedies, the majority are still in accord on the subject of alcohol, and it is still called a stimulant, and given to fortify the heart in its physical labors. I well remember when they cradled wheat, when the whiskey-jug was as indispensable in the harvest-field as it is with some physicians in the treatment of pneumonia. I also well remember that the man who drank the most whiskey gave out first from the physical exertion and heat.

The man who did not touch it was the one who did not give out.

When an athlete goes into training for a physical contest, he endeavors to bring his muscular and dynamic forces to their highest standard, so that he may win. When in training, do these individuals take alcohol to help their development? On the contrary, they scrupulously avoid it, knowing that to drink is to invite and court defeat. If it is essential in order to develop the highest physical and dynamic force, some one will oblige the writer by telling him on what grounds a pneumonic patient should receive from 8 to 24 ounces of whiskey every twenty-four hours. It certainly cannot be said that he needs it as an agent that can be readily oxidized, as it is entirely unnecessary in this short disease, especially if the fever is kept within proper limits—102° to 101° F.—by hydriatic procedure.

As a heart tonic, or as a stimulant to the cardiac motor centre, it has no place. On the contrary, it is a direct depressant when used any length of time. It is true that it irritates the heart and makes it beat with more force when

first introduced, but continued for any length of time it soon depresses all vital function, including the function of the heart.

I do not wish it to be understood that I never give alcohol, for I do, but never to add to the physical force dynamogenetic influence, nor as a cardiac motor stimulant. When used at all, it should be used in small quantities and as a stomachic, or to add to the relish of food like eggnog or milk.

The food and drink is of the greatest importance. Great care should be used to get enough of the former and not too much of the latter. The food must be given in the liquid state, at least nine-tenths of it. The greatest care must be used that we do not get too much liquid into our patient's stomach and system, as it will retard or suspend digestion, and so fill up the vascular system as to greatly retard circulation and add another burden to the heart. It should be our purpose to add, if we can by the use of food, to the energy of the system, and this is best done by the meat extracts and the artificially digested meats. Besides these, milk and eggs may be used. But as persons who are very sick have a disgust for food, or soon tire of this or that food, the dishes must be varied and changed frequently.

One food I have used that patients seldom tire of during the whole of the disease, and many would take it during the entire course without a change, and that is ice-cream. We can flavor this to suit the taste of the individual,—vanilla, strawberry, raspberry, or any other flavor. When taking this freely they seldom want ice or water, and they are getting a highly nutritious food, that cools the stomach and allows better digestion and helps to reduce the temperature. I cannot too strongly insist on taking care that the patient does not get too much liquid. We have been taught by Oertel and others what oppression to the circulation can be produced in cases of cardiac insufficiency by accumulating too much water in the vascular channels. This is true of pneumonia. The greater the blood mass the greater the exertion required on the part of the heart to force it through the narrowed channel in the lung and the system at large, thus adding another burden to the heart. In some patients the thirst is, however, so great that their importunities for water cannot be resisted. This thirst can be very greatly relieved by allowing the patient to suck a little juice from a piece of lemon every fifteen to thirty minutes. This relieves the thirst better than anything I know of; besides, it puts his mouth in splendid condition for food.

In fleshy persons, who are almost always addicted to too much water-drinking, the supply of drink should be cut short. In this way we can reduce the circulating mass in the course of two or three days much more than by bloodletting, and retain every red corpuscle, to carry oxygen to the tissues.

In conclusion, let me add that the principles laid down in this article for the treatment of pneumonia, based on the physiological action of the agents recommended and the pathology of the disease as known at the present time, are entirely consistent and rational, and when carefully and honestly followed will give the best results; will bring our mortality within the unit column.

THE HYPODERMIC INJECTION OF QUININE.

In studying this question, M. KELSCH (*Arch. de Méd. Milit.; La Méd. Mod.*, February 27, 1895) recommends the following two formulæ:

℞ Quininæ hydrochlor. (basic), gr. xlv;
Analgesine, gr. xxx;
Aq. dest., f℥iss.

Or this,—

℞ Quininæ hydrochlor. (neut.), gr. xlv;
Aq. dest., q. s. ad f℥iss.

Fifteen minims contain about eight grains of the neutral chlorohydrate of quinine.

The author gives the following general instructions:

In employing these injections the neutral chlorohydrate of quinine, or the basic chlorohydrate associated with antipyrin should be used, and if aseptic instruments are employed, and care is taken to make the injections gradually into regions that are rich in cellular tissue, the danger of the formation of eschars or of sloughs is avoided.

No form of quinine or method of operating does away absolutely with the chance of these complications, for they are dependent upon the particular subject treated, at least to a great extent. In men who are anæmic from a prolonged sojourn in foreign climates, or reduced by rebellious fevers, these accidents are to be expected, despite all antiseptic precautions or with no matter what salt of quinine. For this reason the use of hypodermic medication should be reserved for cases of intense fever, where it is necessary to act promptly, and where the danger from the hypodermic injection cannot be compared with the danger threatening the patient.

The Therapeutic Gazette

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Leading Articles.

IS DIGITALIS USEFUL IN AORTIC OBSTRUCTION?

WE believe that it is a well-recognized fact in practical therapeutics, first, that digitalis is useful in nearly all forms of cardiac disease, be the valvular lesion what it may, provided that the valvular lesion is accompanied by evidences of failure of compensation on the part of the heart-muscle,—that is to say, a valvular lesion does not indicate digitalis, be it never so marked, but any evidence that the heart-muscle has not hypertrophied to the increased strain thrown upon it by a valvular lesion is an indication for this remedy.

This rule is, of course, a most general one, and may be modified to the extent of stating that it is in cases of mitral disease, either regurgitant or stenotic, that the best results follow the administration of digitalis, for evident reasons. It has been held for many years by able therapeutists that, theoretically at least, digitalis was contraindicated in aortic regurgitation, on the ground that, by its prolongation of diastole, a greater length of time was allowed in which the blood might regurgitate into the ventricle, and that the increased power of contraction in the muscular fibres of the heart did not compensate for the harm done by the prolonged asystolic period. While this idea is absolutely correct theoretically, the clinical fact remains that in some cases of aortic regurgitation it undoubtedly does good, probably by reason of the powerful and complete contraction of the left ventricle which it causes, whereby this cavity is thoroughly and completely emptied at each beat. The employment of digitalis in these three forms of cardiac disease having been briefly considered, the question arises as to whether it is of value in aortic obstruction, and it would seem that there is a considerable divergence of views in regard to this important point. Thus, it is held by some that the cardiac condition in most cases of aortic obstruction is one of excessive hypertrophy rather than lack of compensation, and that the circulatory disturbances seen in persons suffering from this lesion are really often due to excessive activity of the cardiac muscle. Undoubtedly, in such instances, digitalis does good but temporarily, and in the end the patient becomes worse under its influence.

On the other hand, there are those who assert that digitalis does harm, even in those cases of aortic obstruction in which failure of compensation is present, claiming that this drug, by reason of the high arterial pressure which it produces, counterbalances any good influence which it may exert upon the cardiac muscle. It seems to us that this objection is one which holds against the employment of the drug in aortic regurgitation rather than in aortic obstruction; for, as a matter of fact, the arterial tension of most cases of aortic obstruction is not necessarily very high; but, on the contrary, when compensation fails, the difficulties of the case rest largely upon its being too low, and, as Bristowe points out, sooner or later pain, palpitation, and breathlessness supervene, the pulse becomes feeble and irregular, the arteries unfilled, and syncopal attacks come on. The heart in aortic obstruction practically never suffers from the wide dilatation so characteristic of aortic regurgitation, and any failure in its action is dependent more largely upon true feebleness of contractility than upon a failure to drive the blood out of the ventricle, owing to expansion of its walls.

The necessity of the heart is to cause a free and more perfect circulation of blood, and the

only way in which this can be done is by giving the heart sufficient strength to drive the blood through the narrow orifice of the aorta out into the general circulation. The objection that digitalis under these circumstances contracts the peripheral blood-vessels and so increases the work of the laboring ventricle does not exist to the extent that some would have us believe, in our opinion. Even if it did exist, this action of the digitalis, with the already high arterial tension, can be readily set aside through the employment of simultaneous doses of nitro-glycerin or one of the other nitrites. Further than this, we believe that it is a well-recognized fact among pharmacologists that the dominant effect of digitalis is upon the heart-muscle rather than upon the arterioles.

There is but one condition in aortic obstruction which seems to us to offer a grave contra-indication to the use of digitalis, and that is when there is coexistent regurgitant disease of the mitral valve. Under any circumstances the condition of this patient is most grave, since the compensatory hypertrophy of the heart as it increases day by day still further strains the weakened mitral leaflets in its endeavor to force the blood through the stenotic aortic opening. The use of digitalis in the presence of such lesions naturally increases the strain upon the mitral valves.

We believe that the following order of the usefulness of digitalis in valvular cardiac disease may be laid down with considerable accuracy. It is most useful in ordinary cases of mitral regurgitation, next most useful in mitral obstruction, next in aortic stenosis, and least valuable in the average case of aortic regurgitation. Even in the mitral lesions digitalis often fails, and must be supplemented by drugs such as strophanthus, caffeine, and similarly useful remedies.

THE VALUE OF QUININE IN WHOOPING-COUGH.

IF there is one disease more than another which runs its course regardless of medical treatment, at least so far as duration is concerned, it is probably pertussis. It has had almost as large a number of remedies suggested for its treatment as diphtheria, and the high mortality which follows its attack upon those who are feeble or upon very young children renders the possibility of its prophylaxis, its limitation, and its prevention an important question.

Many years ago, at about the time when Binz, of Bonn, first reported his studies as to the antiseptic and bactericidal powers of quinine, suggesting that ultimately the action of quinine in malaria would be explained by its influence over some parasite, certain German clinicians reported the successful employment of quinine as a gargle for the purpose of modifying or aborting whooping-cough. Since that time very little literature upon this subject has accumulated, although we know it to have been the habit of some physicians and of some persons among the laity to administer quinine during an epidemic of whooping-cough to healthy children for the purpose of protecting them from the malady.

It has seemed probable to the writer of this article that any benefit derived from the internal administration of quinine at such a time was indirectly attained through the improved tone of the general system, but that if the drug was used as a gargle, or dissolved in the mouth or employed in a solution by an atomizer, it exercised a distinct specific influence.

Our attention has been called to this subject recently by an article in the *New York Medical Journal* of May 11, 1895, by Dr. Fischer, who quotes quite largely from some recent articles upon this subject published in the German journals. He writes most enthusiastically of the employment of quinine in whooping-cough, and in all of his cases the drug was administered by the stomach. The doses he employed varied from 1 to 6 grains in powder three times a day,—at 6 A.M., 2 P.M., and 10 P.M. He asserts that it was invariably well borne by the stomach, and that it is best to increase its solubility, to add to the solution a little hydrochloric acid. Under such circumstances as these we believe that the drug exercises both a specific influence in the mouth and pharynx, and also increases the tone of the general system. The conclusions which Dr. Fischer reaches follow; and while we cannot be as enthusiastic as he is in favor of this treatment, we have sufficient ground for joining with him in recommending its trial. He says,—

"Summing up the results I have obtained in the quinine treatment of pertussis, I come to the conclusion that quinine, given in the proper doses, is the best remedy for whooping-cough at present known.

"1. It diminishes the number of attacks essentially in five days at latest.

"2. It reduces even the most vehement whooping-cough to a mild bronchitis in twelve to fifteen days.

"3. It influences most favorably a possibly existing broncho-pneumonia.

"4. It often stimulates the appetite.

"If these lines induce practitioners who have with more or less success prescribed other medicaments to give quinine a trial, they will have succeeded in their purpose, and I am convinced the results will give to both physicians and patients complete satisfaction."

THE LAST NUMBER OF THE INDEX MEDICUS.

WE have at various times, editorially and otherwise, urged the necessity of maintaining the *Index Medicus*, in order that the profession might have a register of the progress of medical literature, and we hoped that, after the strenuous efforts which were made in the latter part of the last year, the publication might have been placed upon a basis which would not tax the generosity of the publisher beyond reasonable limits. A certain part of the profession responded when they learned of the true facts of the case; but, unfortunately, this number was too limited to justify the carrying on of the publication, and we regret to learn from the publisher, Mr. George S. Davis, that though he would have been willing to have had a deficit of several hundred a year, the subscriptions are so few that the chief burden of the publication would fall upon his shoulders, and for this reason the April issue of the *Index Medicus* will be the last one published.

The loss to those members of the profession who are engaged in scientific research or in literary work is beyond estimation, and although we appreciate the loss at present, each one of us will find as time goes on that we miss more and more this standard publication.

The thanks of the profession all over the world are due to Mr. Davis for his disinterested maintenance of the *Index* for so many years, and are due him once more for his willingness to carry the burden several months longer than he at first intended, in order that its friends might make the endeavor which has, unfortunately, failed to succeed.

THE TREATMENT OF SUPPURATION.

THOUGH the methods of modern surgery founded on Listerism have enormously decreased suppuration and its attendant consequences, this still constitutes the gravest and most frequent complication of wounds. Its prevention, when the surgeon has to do with previously non-infected tissues, can be almost certainly accomplished. As to the exact method of prevention, there is at the present day less agreement than, for instance, ten years ago, since asepsis has recently made many converts. Indeed, Zeidler states that, after operation upon non-suppurating surfaces the technique is now definitely and conclusively established,—*i.e.*, disinfection is no longer necessary, the surgeon depending on asepsis. This statement is certainly not in accordance with facts, the majority of the surgeons of today still depending upon antiseptics, at least for surface disinfection. Zeidler (*Centralblatt für Chir.*, No. 15, 1895) states that the question of disinfecting already infected wounds is still properly subject to discussion. Schimmelbusch has shown on experimental ground that disinfection is of extremely doubtful value. Reichel and Hanel came to the same conclusion. Indeed, experimental search seems to prove that wound disinfection is utterly valueless. Reichel, on the basis of experiments on animals, shows that extensive phlegmonous processes are successfully limited by excision of the infiltrated tissues, followed by tamponade. Disinfection of the wound surface is absolutely unnecessary. Further, he states that, in the course of the last two years he has treated all suppurating wounds without previous disinfection, but has simply wiped them out with sterile gauze and tamponed them with iodoform gauze. He has been delighted with his results.

Schimmelbusch, Braatz, and Jaffe, in their text-books, characterize even irrigation of suppurating wounds with carbolic and sublimate solutions as superfluous and even hurtful. They hold that not only in aseptic, but even in infected wounds, antisepsis must yield to asepsis. This practice is, however, not generally followed, even the adherents of aseptic surgery, in the case of clean wounds, still using antiseptics when they have to deal with diseased surfaces. Zeidler first began treating infected wounds by the aseptic method in 1888. During the last year this has been the rule. His technique is as follows: the operation field is cleansed in accordance with the accepted methods. During and after the necessary operative procedures the wound is cleansed simply with sterile gauze. Usually there is no irrigation. If this is required, sterile salt solution (.6 per cent.) is used. The wound is then loosely but carefully tamponed with sterile gauze. Over this is applied a gauze dressing and a sterile wood-wool pad or peat cushion. When the dressing is changed, the skin about the wound is carefully cleansed with ether or benzine. The granulating surface is usually not irrigated, but again covered with

sterile gauze. Usually dry dressing is employed. In many cases moist dressing is more comfortable. When this is indicated, the gauze and the wood-wool are moistened in salt solution. A long list of parallel cases has shown that moisture, and not disinfection, is the important factor in wet dressings, the author never having seen the faintest difference in the effect of moist carbolic solution, sublimate, or salt solution. An exception is made only in the case of acetate of aluminum, which is especially serviceable in profusely suppurating wounds and those characterized by exuberant granulations. Tamponade of iodoform gauze was never of the faintest use, even in suppurating and septic wounds. Decomposition of the secretions absorbed in the sterile gauze is not observed, even though these be left in contact with the granulations for eight days. It is advisable to have an absorbing dressing and one which is permeable to air. Even when moist dressings are used, no impermeable material is employed. The uselessness of antiseptics is shown by the fact that invariably, after the most thorough employment of the disinfection, micro-organisms can be obtained in great abundance. As for the antiseptics contained in the dressing, the author states that he has never seen even a restraining influence by them upon bacterial development. The results under aseptic treatment are distinctly better than those which follow rigid antisepsis. The secretion is much less, the development of granulations proceeds normally, and, even though the dressing is changed very infrequently, there is no odor. As long as provision is made for the free outflow of pus, the wound runs a normal course. The important points in the treatment of suppurating processes are free opening and free drainage; the disinfection of the wound is not only unnecessary, but distinctly hurtful.

Schimmelbusch (*Centralblatt für Chirurgie*, No. 11, 1895) conducted an elaborate series of experiments to determine whether the energetic use of antiseptic irrigations had any value in destroying the active germs found in suppurating wounds. A number of mice were infected with anthrax. In a certain proportion the wound, immediately after infection, was thoroughly irrigated with three-per-cent. carbolic solution or 1 to 1000 sublimate. All the animals perished, and similar results were reached, even when the animals were infected with the sterilized blood of subjects previously dead of anthrax. It is impossible to save animals infected by anthrax, even though the most thorough and radical means for disinfection of the wound are taken immediately after the inoculation. The second series of observations was made upon animals infected with blood taken from the heart of guinea-pigs dead of streptococcus infection. The most thorough disinfection with sublimate solution immediately after infection invariably failed to save life. From this it follows that the germs of infection very quickly penetrate into the depth of the wounds, and are thus protected from antiseptic lotions. To show the rapidity of absorption, a number of mice were infected with anthrax at the extremity of the tail; then, for a varying time, the tail was amputated, every precaution being taken to prevent infection of the amputation wound. It was impossible to save these animals if an interval greater than ten minutes elapsed between infection and amputation.

The proof above detailed as to the uselessness of antiseptics in the treatment of suppurating wounds is partly clinical and partly experimental. The clinical portion rests only on the assertion of very few observers, and these apparently prejudiced against antiseptic methods; hence it is not entitled to great weight. The weakness of laboratory proof has long since been shown. It will take evidence far more clear than this to convince the practical surgeon that the mild antiseptic lotions and dressings which he employs in the treatment of suppurating wounds, even though they cannot bring about complete sterilization, do not serve a useful purpose in preventing decomposition of discharges, in lessening the number and virulence of germs, and, in certain cases, in rendering inert toxic substances which would otherwise be absorbed and produce systemic disturbances. Whatever may be the state of affairs in Germany, it is safe to say that in this country the majority of general surgeons, even in the case of previously healthy surfaces, have given aseptic surgery a trial and have abandoned it.

Quite another line of research, and one promising in the extreme, has been taken up by Parascandalo (*Centralblatt für Chirurgie*, No. 11, 1895). He conducted a number of experiments upon animals, with the idea of producing immunity against infection with streptococcus and white staphylococcus. He administered to these animals a gradually increasing dose of the toxins of these micro-organisms, and succeeded in so preparing them that a dose of bacteria which destroyed unprotected animals, in the protected animals produced absolutely no symptoms.

In the same line come the investigations of Gramakowsky (*ibid.*; quoted from *Russkaja*

Medizina, 1894, Nos. 38 u. 39), who, after a series of experiments directed towards immunizing guinea-pigs against streptococcus and for the purpose of formulating the treatment of erysipelatous diseases with blood-serum, announces the following conclusions: guinea-pigs can be immunized against streptococci. This end is accomplished by injecting into the abdominal cavity bouillon cultures of streptococci which have been standing for some months. First, boiled cultures are injected, then those which have not been boiled; finally, virulent cultures are employed in successively increasing doses. The serum of guinea-pigs thus immunized, if injected beneath the skin of other guinea-pigs, makes them immune to streptococci. The same serum acts very favorably when injected beneath the skin of animals already infected with erysipelas. To produce this effect, three centimetres must be used for every kilogramme of the animal. In one case of erysipelas in man, Gramakowsky injected beneath the skin, on the fifth day of the disease, 8 cubic centimetres of serum taken from an immunized guinea-pig. This was diluted with an equal bulk of two-per-cent. boric acid solution. One hour later the dose was repeated. As a result of this treatment the erysipelatous process was immediately arrested. In another case of erysipelas in a man the injection of the serum was without effect, because, Gramakowsky states, the guinea-pig from which it was taken was not sufficiently immunized. In spite of his limited experience and failure in one instance, he expresses the hope that the serum of immunized animals may prove a specific against erysipelas in man, and that it is evident that this treatment should be equally efficacious in the treatment of phlegmons, pyæmia, puerperal fever, scarlet fever,—indeed, against all diseases which seem to depend, at least in their more virulent manifestations, upon the presence of the micro-organisms of pus.

Reports on Therapeutic Progress.

TREATMENT OF PUERPERAL ECLAMPSIA BY THE HYPODERMIC INJECTION OF PILOCARPINE.

The result of the action of this drug in four cases which M. GRINBERG (*Mediciniskoïe Obozrenie*) relates, lead him to believe in the efficient action of this drug in cases of puerperal eclampsia. This drug arrested the attacks in cases where other means had failed. But the author observes that this treatment can only be used in women who were previously healthy and are robust, and then only after other drugs (chloral, morphine, etc.) have been tried and have failed.

The dose given is ⅛ grain of pilocarpine, sometimes associated with injections of ether or morphine.

The injection, besides the profuse sweating, produces a hypersecretion of saliva. In one case, that afterwards died, after the cessation of the eclampsic attack, the saliva was very profuse and had the appearance of a white, viscid liquid. The author suggests that there must have been a lesion of the bronchial mucous membrane, and that on that account the pilocarpine produced hypersecretion, pulmonary œdema, and finally a mechanical asphyxia. He would in consequence advise great care in its use in cases where there is any reason to suspect a lesion of the respiratory apparatus.—*La Méd. Moderne*, March 9, 1895.

THE TREATMENT OF CHRONIC SCROFULOUS OTORRHŒA.

M. ISAIA (*Revue Internationale de Médecine et de Chirurgie Pratiques*, December, 1894) gives the following formulæ for the treatment of this condition:

℞ Balsam Peruvianæ,
Alcohol, of each, ʒiiss;
Cocaine hydrochlor., gr. viii to xv. M.
Sig.—For external use.

Or this,—

℞ Balsam Peruvianæ, ʒi, gr. xv;
Glyc., ʒiiss;
Cocaine hydrochlor., gr. vii to xv. M.
Sig.—For external use.

Or this,—

℞ Balsam Peruvianæ,
Balsam Tolu, of each, ʒss;
Alcohol, ʒi to ʒiiss;
Cocaine hydrochlor., gr. xv to xxx. M.
Sig.—For external use.

These formulæ are used in the following manner: after the external auditory canal has been thoroughly cleansed with a solution of resorcin, of boracic acid, or simply a salt solution, the canal is made insensible with cocaine, and a few drops of one of the above solutions are then instilled into it, or a tampon previously saturated in one of these solutions may be introduced.

In the hands of Dr. Isaia, of Naples, these solutions have generally given good results, but they should not be employed where there

are any excoriations, since the balsams are liable to set up an irritation that may result in a painful inflammation.

PYOKTANIN IN SUPPOSITORIES.

The various cases in which the aniline derivatives are now employed has been frequently commented upon. The following is a method for employing it in suppositories in the treatment of cancer of the rectum, as suggested by M. SCHULTZ (*La. Méd. Mod.*, March 9, 1895):

℞ Pyoktanin, gr. i;
Pulv. opii, gr. $\frac{1}{12}$;
Ol. theobrom, q. s. M.

TREATMENT OF INFLAMED HEMORRHOIDS.

The pain and irritation accompanying inflamed hemorrhoids may be quickly calmed and relieved, according to M. A. ILLINSKY (*Rev. Int. de Méd. et de Chir. Prat.*, December, 1894), by the following method:

After each stool, either spontaneous or provoked by the ordinary mild purgatives used in such cases, the patient should wash himself with a weak solution of bichloride, about 6 ounces of a 1 to 10,000 solution. Immediately after this injection he should introduce a tampon of cotton impregnated with the following ointment:

℞ Lanolin, ℥iss;
Vaseline, ℥v;
Aq. dest., ℥i. M.
Sig.—For external use.

These applications should be made a number of times each day.

METHYL-BLUE IN BRIGHT'S DISEASE.

Wishing to test the method employed by Dr. Wetchaïeff in the treatment of acute nephritis, DR. LOWENTHAL has employed the following in twelve cases of varied forms of acute infectious nephritis:

Methyl-blue was administered every two days in capsules containing $\frac{1}{3}$ grain each, three doses to be taken in a day. The drug was, in general, well supported by the stomach, except in two cases in which it was taken early in the morning. It never produced pain in the epigastrium or abdomen, and caused no gastro-intestinal disturbance. There was no harmful effect upon the respiratory and circulatory systems. There was no headache, the sleep was quiet, and urination was easy and without pain.

The urine assumed a blue tint a few hours after the absorption of the first dose; the depth of the color increased rapidly and persisted, after the stoppage of the medicine, for some days. The drug augmented the diuresis commencing after the patient had taken 5 to 8 grains.

Œdema disappeared after eight days of treatment; the ascites after ten to twenty days. The albumin in the urine diminished, and finally disappeared completely. At the same time the granular epithelial casts and red corpuscles disappeared from the urine, and finally the hyaline casts.

In cases of uræmia, the author advises the hypodermic injection of the drug.—*La Méd. Mod.*, March 9, 1895.

A DRESSING FOR UTERINE CANCERS.

LUCAS (*Rev. Int. de Méd. et de Chir. Prat.*, December, 1894) recommends the following powder to be applied after the raw surface has been freely exposed:

℞ Benzoin,
Iodoform,
Magnesia carbonate, of each, ℥ii.

This dressing arrests and diminishes the fetid secretions and prevents them from producing excoriations upon the vulva and perineum.

PRURITUS VULVÆ.

For this troublesome and persistent affection, for which so many drugs have been prescribed, MADDEN (*La Méd. Mod.*, March 9, 1895) recommends a lotion of ten per cent. of methyl-blue. In this connection, the employment of frequent washings with warm water and antiseptics are necessary. After washing, a solution of sublimate (1 to 1000) should be used, followed by the methyl-blue lotion. The same remedy should be administered in doses of 1½ grains in capsule two or three times a day. The effect is marked, but the treatment has the disadvantage of permanently discoloring the skin of the region to which it is applied.

THE TREATMENT OF HÆMOPTYSIS.

MORAIN (*Rev. Int. de Méd. et de Chir. Prat.*, December, 1894), taking as his type tuberculous hæmoptysis, considers that all should receive the same treatment. This treatment he gives as follows: the removal of all clothing that can

compress the throat or chest; the patient should be so seated that the trunk is nearly vertical. Silence and repose on his part should be insisted on, while the windows ought to be opened. While waiting to do better, the patient should suck ice, though marked results cannot be hoped for.

Ergotine or, better, ergotinine, hypodermically injected, is the treatment; for example, 15 minims of the following solution:

℞ Ergotine, gr. xxx;
Glycerin neutral,
Water, of each, ʒiv.

If ergotine cannot be obtained, ergot should be given, as the fluid extract, in doses of ½ to 1½ drachms. The perchloride of iron should be avoided. Opium should be given in pills or, preferably, as hypodermic injections of morphine (⅙ to ¼ grain), repeated frequently enough to produce somnolence.

At the same time a revulsion as energetic as possible should be produced; for this purpose sinapisms should be applied to the lower extremities and dry cups to the thorax. Where the hemorrhage is abundant the limbs may be bandaged, and, if the patient is menaced by syncope, hypodermics of ether, and injections of saline solutions which should be retained are of value.

If these measures are not successful, one may have recourse to ipecac, which may be administered in either of the two following methods: a dose to produce vomiting (½ to 1 drachm) within a half-hour; or to produce nausea, by giving five to six doses, at ten-minute intervals, of 1½ grains of pulverized ipecac.

In addition, the application of ice to the chest often produces good effects. As food, iced milk is allowable, champagne frappé, cold bouillon, and lemonade.

THE TREATMENT OF TUBERCULOUS ABSCESSES BY THE INJECTION OF THE OIL OF CLOVES.

A very interesting article on this subject is contributed by M. ANGELO MARRIOTTI, of Pisa (*Therapeutische Wochenschrift*). He employed the oil of cloves in cases of tubercular synovitis and adenitis, in fistulous tracts and tuberculous abscesses, in the following manner:

An emulsion is made of one part of the oil of cloves in ten of olive oil or liquid vaseline, which has been previously sterilized. After having determined the tuberculous nature of the disease by inoculation in guinea-pigs, he injected into a tubercular synovitis, with a hypodermic syringe, 15 to 30 minims of the emulsion at different points every second day. The immediate effect of the injection was a slight but evanescent burning, with sometimes a slight local inflammatory reaction, which disappeared after rest or external local applications.

In one case complete recovery of a fungus synovitis, with perfect preservation of the function of the joint, resulted. In the other cases there was a slight amelioration of the general and local condition, but otherwise the result was negative. The result upon the synovial membrane was always beneficial.

The effect was absolutely negative in an adenitis in the stage of induration; but, on the contrary, when softening had set in, the injections produced excellent results.

In fistulous tracts of osseous origin the results were not definite, but produced better results than many other forms of treatment, and proved especially useful in fistulæ that did not have an osseous origin. In these cases the author injected a quantity of the emulsion sufficient to penetrate into all parts. After two or three injections the fungosities were softened and eliminated with the sero-purulent discharge. Then the healthy granulations followed and the sinus gradually healed.

The greatest success was, however, obtained in the case of tuberculous abscesses, where the cure was complete and rapid. After the puncture and evacuation of the abscess, he injected about 50 minims, or more if the abscess were a large one. This was rubbed gently about until it had come in contact with the entire inner surface of the abscess; it was then pressed out as far as possible and a slight amount of fresh emulsion injected, which was allowed to remain; this treatment was repeated every other day. The treatment did not continue long, one or two injections sufficing for the smaller abscesses. Where pus continued to be secreted, a compressive dressing was applied. Abscesses the size of an orange were cured in six or seven days. Collections containing nine fluidounces of pus were cured in ten to fourteen days, without leaving any trace behind,—an important factor, especially in abscesses in the region of the face and neck.

TREATMENT OF THE ITCH.

Friction is not easily endured by children, as it irritates their delicate skin. M. FEULARD (*Rev. Int. de Méd. et de Chir. Prat.*, December, 1894) prescribes the following to replace it:

1. Applications to the regions which are gen-

erally the seat of the disease with the following pomade:

℞ Adepis, ℥vi;
Balsamo Peruvianæ, ℥v;
Naphtol, ℥i.

2. The following day this should be washed off with soap and dusted with almond meal.

3. This treatment is continued for two or three days, the cutaneous irritation being calmed by the following ointment:

℞ Vaseline, ℥i;
Zinc. oxid., ℥i.

THE TREATMENT OF THE GASTRIC CRISES AND DIGESTIVE DISORDERS OF DIABETIC PATIENTS.

Gastro-intestinal irritation is far from rare in the more advanced periods of diabetes. Dr. Grube, of Neuenahr (*Münch. Med. Woch.*), calls attention to a form of crisis which appears spontaneously without prodromes, while the patient is feeling relatively well, and which may last for days or for hours; and after the cessation of the acute attacks there is still present a great amount of weakness. The attacks come on in the morning, with violent abdominal pain, most marked in the epigastric region, with flatulence and eructation. Oftentimes this is followed by nausea and vomiting. At the same time the patient has cramps in the legs, dryness of the mouth, a slight elevation of temperature, and an acceleration of the pulse. The urine contains, besides sugar, acetone, but does not show a reaction with diacetic acid and does not contain oxybutyric acid. The chloroform odor is very pronounced.

This author recommends in these cases the provoking of a stool, either by purgative water or oil enema, and the application of hot compresses to the abdomen. All medicines given by the mouth are vomited. During the crisis the patient can take nothing. Later he can take bouillon of fowl, milk, tea, or water with brandy. The vomited matters are non-digested food; they are acid in reaction, and seem to contain a large amount of hydrochloric acid.

The author believes the crises to be produced by the action upon the vagi of toxins contained in the blood. Although the crises are not in themselves dangerous to life, they show that the end is approaching, and if care is not taken, by restricting the diet and keeping the bowels open, the end will soon come. Observation has shown that the glands of the stomach are atrophied, and the author observed this in two cases during the autopsy. To combat the conditions produced by this atrophy, the author has employed with success an alcoholic extract of beef pancreas. This medication has no influence upon the glycosuria, but ameliorates the gastro-intestinal symptoms.

The extract is made in the following manner: the fresh beef pancreas is finely cut up and mixed with a pint of alcohol at 15°; it should stand in a cool place for two days. It is then filtered two or three times, and a little fine champagne is added to give it a flavor. The dose is a wineglassful three times a day, immediately after meals.—*La Méd. Mod.*, February 27, 1895.

THE TREATMENT OF ABORTION.

Dr. Rivière in studying this question, asks, "Is it inevitable, or can the abortion be prevented?" This is the first question to be decided by the practitioner. If the fœtus is dead, if the membranes are ruptured, or if the cessation of the pregnancy may be truly termed providential for the mother, the abortion is inevitable, and nothing should be done to prevent it. If this is not the case, then it may be that the hemorrhages have been marked, that the uterine contractions have been frequent and strong, that the neck of the uterus is widely dilated, and is apparently ready to allow the egg to escape; there is yet, however, hope of arresting the abortion.

There are two measures to be employed,—absolute rest in bed and the administration of opium. After the patient has been put to bed, open the bowels freely by an enema, and after this has operated, give an enema containing 20 drops of Sydenham's laudanum (vinum opii). In giving this, a small glass syringe should be used, armed with a long, fine rubber catheter, which should be pushed well up into the intestine. Frequently the uterine contractions are calmed and the loss of blood ceases, and the normal state returns. There is at least an attenuation of the symptoms. Two hours later, or one if imperatively needed, a second injection of 20 drops may be used, and even a third at an equal interval, while the injections may be continued up to 100, 120, or 150 drops, the susceptibility of the patient being carefully watched.

What is to be done if, in spite of all these measures, the abortion continues to come on? In the first case, when there are no complications, there is nothing to be done but to let nature take its course under antiseptic precau-

tions; and at the end ascertain if all has come away,—an easy matter if the ovum has been expelled entire, but more difficult if it occurred in two stages. In all cases without complications the expectant antiseptic method of treatment is the only one.

In the second place, if there are complications,—that is, hemorrhage and sepsis. Hemorrhage is seldom seen while the ovum is still within the uterus, though it may occur. The danger is from the hemorrhage and the treatment is of the hemorrhage, which must be arrested. Tampon the vagina with tampons of antiseptic cotton. Tampon without the use of the speculum, firmly and without ointment; it is a little painful, but it is a sure method. There is usually produced an excitation of the uterine contractions, and when the tampon is removed the ovum comes with it.

When the hemorrhage is due to a rupture of the ovum and the escape of the fœtus, the membranes, in part or in whole, remain behind in the uterus,—a condition that is very frequent; this is a greater complication. The treatment of the hemorrhage is to empty the uterus, but it must be done completely. This can be frequently done by curettage by the finger, but often requires curetting with an instrument. This accomplished, the hemorrhage ceases; if it continues, there are still some fragments in the uterus, and the operation must be repeated. That is the true radical treatment. If, however, the practitioner hesitates, he may tampon again.

Septicæmia.—If you are present at the beginning, a rigorous antisepsis of the external genitalia should be insisted on, as well as of the vagina, while an intrauterine douche morning and evening of weak sublimate solution, and the powdering of the external genitalia with iodoform, and the closure by a dressing of antiseptic cotton and a T-bandage is necessary. If, in spite of rigorous antisepsis and large doses of quinine, the fever persists, chills return, and the abdomen becomes painful, curettage is indispensable.—*Rev. Int. de Méd. et de Chir. Prat.*, December, 1894.

MEDICAL TREATMENT IN DIPHTHERIA.

In an article with this title, MASON writes in the *Boston Medical and Surgical Journal* of February 14, 1895, recommending his line of treatment. He thinks that nutritive enemata may partially obviate the difficulty attending swallowing and deglutition, but they are seldom well retained by young children. Systematic feeding by a soft catheter passed through the nostril into the gullet sometimes saves life. The writer has seen recovery in the case of a child with complete faucial paralysis, who for four weeks could be fed in no other way.

In the use of topical sprays or lotions, it may be asked, Have we any agent on which we can depend to arrest the disease or to prevent the extension of membrane to dangerous localities? It is not improbable that success would oftener attend our efforts in this direction if cases were seen at an earlier stage, but in those which have already become malignant, in which the membrane spreads with great rapidity, nothing at our command has thus far been able to avert septicæmia or croup with any degree of certainty whatever.

In the use of local remedies there is great room for choice and for individual judgment as to the mode and frequency of their application. Their effect upon the patient must be carefully observed, the amount of pain which they cause and the degree of fatigue which follows. Great exhaustion not uncommonly ensues in patients whose hearts are already weakened; therefore it is evident that in such cases, especially with young and frightened children, it is best to make the intervals less frequent and to use the milder and less painful cleansing agents. Physicians have recommended an almost constant spraying and swabbing of the nose and fauces, every half-hour, day and night. Such zealous measures, except for very brief periods, exhaust the child and wear out the nurses. Force is objectionable, but its judicious use may be necessary in young subjects. In patients with pallid countenance and feeble pulse, no treatment which obliges them to sit up is permissible. Irrigation with the douche-bag can be resorted to in the recumbent position. Sleep, fresh air, and an abundance of drinking-water are of the first importance. Plain or medicated steam, so often used for impending croup, is of doubtful benefit and the heat is uncomfortable.

Of the many detergent and antiseptic remedies for cleansing and sterilizing the nose and fauces, the more powerful and painful agents have been generally abandoned as useless or harmful. Mild carbolized sprays, such as Dobell's, lime-water, warm alkaline solutions, chlorine-water, and peroxide of hydrogen, may be used, the latter in a ten- or fifteen-volume solution, or stronger, once or twice daily for a few days, for the removal of membrane. It has a perceptible effect upon the exudate, but is sometimes painful, and the writer is of the opinion that its prolonged use

is more irritating than the other substances mentioned. Its germicidal effect must be considered, and in this respect he has found swabbing twice a day with corrosive sublimate (1 to 5000 or 10,000) valuable. Mercurial poisoning may occur. This is an objection to the free use of corrosive sublimate inhalations from the steam atomizer. A saturated solution of boracic acid is often used. Cocaine mitigates the pain of local applications.

With these measures many bad throats, and a few of the worst, clear up and recover, even after a moderate degree of sepsis has developed, and most certainly the employment of active antiseptic measures in a prudent manner is and always will be a requisite in the management of the throat-affection in diphtheria, not only with reference to the Klebs-Löffler bacillus, but also to the streptococci and staphylococci which add so much to the danger. But they do not reach far enough.

The disinfection of the nose is most difficult, both on account of pain, when forcible spraying is resorted to in the swollen and almost impervious condition of the nostrils, and from the inflammation of the frontal sinuses and middle ear caused by too zealous attempts to cleanse the nasal passages by the douche or atomizer.

Therefore, in young children especially, the blandest fluids, at a warm temperature, by their own gravity only, should be used in the nose. Adults may use the warm saline douche, or a very weak solution of peroxide of hydrogen, cautiously.

TREATMENT OF INSOMNIA.

BRUSH, the well-known alienist of Maryland, contributes a paper with this title to the *Maryland Medical Journal* of February 23, 1895.

In numerous instances which he could report it has been found that the patients did much better after their admission to the asylum, both as concerned sleep and amelioration of their general nervous and mental symptoms, when the hypnotics which had been prescribed were discontinued or very largely reduced, and tonics, proper food, and attention to the personal hygiene of the patient substituted therefor. It is too often the case that physicians who treat insanity in the earliest stages forget or are oblivious of the fact that the symptoms which are most prominent—namely, sleeplessness, mental excitement or depression, and possibly disorder of one or more of the senses —are in a large proportion of cases the direct result of physical and nervous exhaustion and the imperfect elimination of the products of tissue waste and metamorphosis, which, having been retained, have produced a state of auto-intoxication, of which the general symptom group presented in the patient is the evidence. To give such a patient chloroform, the bromides, or opium in any of its preparations, or any of the more modern hypnotics, would, in many instances, add a new feature to the complicated problem already presented rather than produce relief. Some of the most distressing complication of cases of insanity which he has seen have been due to prolonged use of the bromides. It may not be out of place, indeed, to call attention to the fact that experience has shown that several of the new hypnotics and analgesics have been found by various independent observers to seriously disturb the digestive and renal functions and to produce themselves symptoms of toxic delirium. Five years ago he called attention to the fact that sulphonal, in most cases, caused diarrhœal disorders and impaired intestinal digestion. Evensen (*Deutsche Medicinische Wochenschrift*, No. 10, 1894), a Danish physician, in two cases, and Stein (*Therapeutische Monatshefte*, February, 1893) in one, found that hæmatoporphyrnuria was induced by sulphonal. In Stein's case there was albuminuria, necrosis of the tubules, and other evidences of toxic nephritis. A case has also been reported by Schaffer, assistant at the asylum at Heppenheim, in which similar symptoms were observed.

Too little is known of the etiology of the rare condition known as hæmatoporphyrnuria, of which but a few cases have been reported, to estimate its exact significance, but it is certainly worthy of note that four, at least, of the few resulted from sulphonal-poisoning. A drug which is capable of producing such serious blood changes is certainly one which should not be rashly prescribed. Habit cases have already been reported of sulphonal and phenacetin, and he has had under care a patient with the antikamnia habit. When the drug in this case was discontinued, the patient had a chill, followed by a high temperature, delirium, and subsequent great prostration. The patient, on admission, was profoundly anæmic and approached very nearly to the condition of a case of pernicious anæmia. He had albuminuria and hæmaturia and evidences of profound toxæmia. From these he rallied for a time, but subsequently died after leaving the institution. Hypnal has been too little used, and tetronal and trional are of too recent origin, to have experience concerning them accumulate, but

they all belong to the same group, and may be properly regarded with suspicion and used with care.

Paraldehyde, if used for but a brief time continuously, as he has had occasion to note in patients admitted under its influence, produces a peculiar intoxication, and its taste and odor render its use disagreeable; moreover, in patients with pulmonary disease its well-known irritating effect upon the respiratory mucous membrane contraindicates its use.

Of the purely analgesic drugs, like antipyrin, phenacetin, and acetanilide, it is sufficient for the present purpose to say that they afford but temporary relief, that their use may develop into habit, and that serious circulatory disturbances and tissue-changes have been attributed to their use.

It is to be deplored that the public has been taught that these drugs are harmless, and has come to apply them without advice and often without necessity. The faculty should issue a warning that has no uncertain sound against the indiscriminate use of these, in some cases, dangerous compounds. Brush perhaps owes his readers an apology for wandering so far from his text, but these points are among those upon which he had to ponder in considering some of the problems which has faced him in treating the varying disturbances of physiological function which have been found in his patients and which have been some of the elements involved in many of them. Moreover, this seemed a good occasion to raise a protest against the popular use of these new hypnotics and anodynes.

The modern treatment of insanity and of nerve disorders in general may be summed up in tonics, food, rest, and attention to personal hygiene, under which may be included attention to all the physiological functions. Why not, therefore, apply the general to the special indication in these cases, and in place of prescribing an hypnotic simply as an hypnotic, attempt to combat the sleeplessness by such attention to the physical state of the patient as would be at once suggested were this condition not lost sight of by the more prominent symptom and apparently more distressing one of sleeplessness? Brush is well aware that often in private practice the apparent necessity of quieting the patient, and the importunities of friends, induce the use of drugs which might not be employed under other circumstances, and that in some cases sleep and quiet are absolutely necessary, and time will not permit any resource except the employment of hypnotic medicines. He has seen, however, more than one patient with a rapid, feeble pulse, a dusky, almost cyanotic, countenance, dilated pupils, dry, brown tongue, and restless delirium pass into a condition in which sufficient sleep was obtained by the careful administration of food, heart tonics, and diffusible stimulants.

There are numerous cases of insomnia due to renal or heart-disease, and a long line of cases in which lithæmia plays a prominent causative *rôle*, in which the sleeplessness is best met with attention to these conditions. Not only do we remove the insomnia by so doing, but we are at the same time upon the high road, and indeed the only road, which leads to a permanent improvement of the general nervous and physical prostration of the patient.

About seven years ago, Professor Lauder Brunton, in the *Practitioner*, called attention to the use of strychnine as an hypnotic. The use of the term hypnotic in connection with strychnine may sound strange to many, and strictly speaking it is not an hypnotic, except as any drug may be considered one which places the patient in a condition to sleep. He showed in this very suggestive article that strychnine, by its direct action as a general tonic, and by its action upon the nerve-tissues themselves, produced such a condition that sleep was not only possible, but was often, in cases under consideration, best produced by this means.

The employment of baths, massage, dry frictions, and mild counter-irritations to the skin are methods so well known as to require little more than a passing notice.

The warm bath has advantages which few who have not systematically tried it appreciate. It may be made at once a stimulant to the circulation and then a sedative. Some seven years ago, A. Symon Eccles, M.B. (*Practitioner*, March, 1888) showed that the administration of a bath for the purpose of inducing sleep was not as simple a matter as it seemed. The bath should be administered in a room whose temperature is 65° to 70° F. The patient is made to stand with his head over the edge of the tub, and his head and face are then rapidly douched with water at 100° F. The cooling of the body by the air and the hot sponging of the head sends the blood to the head, dilating the vessels of the entire brain. The entire body is then immersed, except, of course, the head, in a bath at 98° F., which is rapidly raised to a temperature of 105° to 110° F. In a few minutes the patient is taken from the bath, wrapped in warm blankets, and, without exertion on his part, taken to his

room. The blankets absorb the moisture; in his room his night-clothes are put on, a warm bottle placed at his feet, and possibly some warm liquid food administered. The sedative and refreshing result is often most marked.

The theory of this proceeding is easily comprehended. After the vessels of the brain have been filled by the cooling of the skin of the body and the hot douching to the head, the warm bath dilates the vessels of the trunk and extremities, with corresponding contraction of those of the brain, which, with the slowing of the heart induced by the bath, reduces the supply of blood to the whole brain, and at the same time the vascular sewers of the brain have been flushed, and blood charged with the products of tissue waste, of disordered digestion, or with various toxic elements of internal or external origin, has been replaced with a fresh supply.

Some patients cannot be subjected to this method, for one reason or another. For these, massage, sponging of the body, followed by hot sponging for from three to five minutes from the vertex to the tip of the spine, and subsequently brisk friction with Turkish towelling of a portion of the body at a time until the whole body has been gone over, will be found a fairly efficient substitute.

If massage can call into the blood-stream, as seems to be the case, blood-corpuscles which have lain hidden and dormant in the capillary system, it is not too wild a conjecture to infer that the cerebral circulation can be quickened and the entire vascular system of the brain flushed out in this or some analogous manner. Massage, moreover, appears to increase the local blood-supply in the manipulated parts at the expense of deeper structures, and to cause lower blood-pressure conditions, both favorable to sleep.

The hot pack to the abdomen, preceded by friction of the limbs and kneading of the abdominal walls, will, in certain cases, be of great service. In all of these cases the administration of hot milk, oatmeal gruel, or the animal broths will be an efficient adjuvant.

If we take the classification of insomnia as laid down by Professor Sée, it is quite evident that not many of our cases can be placed arbitrarily in any one of the divisions which he makes. There may be, for instance, a combination in the production of insomnia of pain, cardiac disease, and some condition of toxæmia. If, however, we examine the cases as he presents them, it will be found that it is in the first class, the cases of insomnia from pain, and almost in that class alone, that we require morphine or some similar preparation. Those numerous cases of insomnia which depend upon some disorders of digestion, either gastric or intestinal, are not infrequently the most difficult ones to treat. It is plain that narcotics and hypnotics are of little or no utility in these cases. He attributes in many of these cases the cerebral agitation to an excessive acidity, or what he terms "hyperchlorhydria," in which cases he prescribes drachm doses of bichlorate of sodium in a glass of hot water on retiring. Many of these cases are due to, or complicated by, intestinal indigestion or fermentation. In such cases naphtalin will be found of considerable value, and an improvement in sleep and in the patient's mental state has been observed to follow its use.

Next in order, possibly, to the cases of insomnia from digestive disorders are those arising from lithæmia or uræmia. In the lithæmic cases exercise which favors the complete transformation of the waste products and promotes excretion and circulation will always be found beneficial. In those cases in which active exercise on the part of the patient cannot be taken, the passive exercise of massage will be found to be a fairly efficient substitute. These cases are quite analogous in many respects, in the matter of treatment, to those conditions of insomnia arising from digestive disorders, and they also bear an intimate relation to the cases of toxæmia either from substances taken into the body or from auto-intoxication.

In some of these latter cases, and especially in cases of alcohol and opium intoxication and the insomnia resulting therefrom, the prolonged warm bath, with brisk friction following, or occasionally the wet pack, have, in the several instances in the writer's experience, proved of remarkable value. In some cases of alcoholic and in many cases of opium intoxication, the condition of the heart is such that the prolonged warm bath can only be administered by exercising great caution. The heart must be supported occasionally by stimulants, and it is always a good plan to give to these cases during the bath some easily digested liquid food, as, for example, hot milk or hot beef-tea.

TREATMENT OF DIPHTHERIA.

BUCKINGHAM tells us in the *Boston Medical and Surgical Journal* for February 14, 1895, that he is in the habit of giving stimulants from the beginning of an attack of diphtheria, often with a small initial dose, but knowing no

upward limit until the pulse is strengthened, or, on the other hand, intoxication or permanent smell of brandy is reached. The author recalls only one case of intoxication, but a permanent smell of brandy is a danger-signal that he has known to be followed by vomiting when its warning has been disregarded. Some patients can take surprisingly large amounts. The most extreme case that the writer recalls was a girl of seven years with septic diphtheria, who took 12 ounces of brandy per day, with no apparent effect except to keep her heart beating. Of course, such cases need careful watching. Digitalis and strychnine have a valuable place in enabling us to keep the dose of alcohol within the limits of the stomach's tolerance. The effervescence of champagne does not irritate the sore throat in all cases.

Since the disease is so exhausting, feeding is an important part of its treatment, but it is sometimes difficult on account of intense soreness in swallowing. Ice-cream, iced milk, or iced milk and brandy mixed with a cobbler-shaker or an egg-beater, have enabled the writer to give much more food than he could have given without them. Rectal enemata have a place; and twice last winter, when the rectum failed to retain these, he ordered liquids to be administered to a little child by means of a soft catheter into the stomach; both children died. In one case the house physician exercised the discretion allowed him by stopping treatment, as the child was failing in spite of it. It is a treatment only to be resorted to in emergency. Even then, if there is great resistance, perhaps by exhausting the strength, it may kill as surely and less comfortably than would total neglect.

Rest is so important in maintaining the general strength that any treatment involving frequent serious disturbance of the patient ought to be looked upon with great suspicion. Disturbance of rest may do more than wear out the strength; it is just possible that it may increase the area of the local lesions. So little is known of the conditions favorable to the action of the diphtheria bacillus, and the following group of cases is so unusual, that they are reported for what they are worth.

Two internes, comfortably sick and occupying the same private room, amused themselves by playing ball for the greater part of an afternoon, tossing a folded handkerchief from bed to bed. On the following morning each of them was much prostrated and each had an enormous increase of membrane. Two women, comfortably sick, acquaintances and also occupying a private room in common, were in and out of bed and in each other's beds many times in one evening, giving the nurse some trouble. The following morning each of them was much prostrated and with a great increase of membrane. Some twelve convalescent children were allowed to play together. They were so long in getting entirely well that immediately after the occurrence just mentioned they were all ordered to bed. They then began to recover one by one. These children had had scarlet fever as well as diphtheria.

Placing great stress on economizing strength, the author thinks that care should be taken not to abuse the use of steam. It makes a depressing atmosphere, and if steam is concentrated about the bed by means of a tent, it also makes a close atmosphere, at times a very foul one. It is recognized that steam inhalation sometimes relieves dyspnœa before surgical interference as well as after, and it is the abuse, not the use, of steam that is objected to. He makes no comment on its use after operation. Before operation, however, it should be intermitted long enough to find out if the occasion has passed, as we now know that the relief given by steam and poultices is occasionally permanent. Such permanent relief is so unusual that the writer was formerly inclined to think it occurred only in cases where dyspnœa was due, not to membrane or infiltration, but to dryness of the mucous membrane caused by passing through cold streets. He has had, however, a few patients in whom this symptom has come on after days of residence in the hospital, and who have yet recovered under this treatment alone. Therefore, the rule, once dyspnœa, always operation, has a few exceptions. They are probably very few.

Among means of treatment, in which the present year's experience has taught Buckingham to place great reliance, is the combination of fresh air and sunlight. During February the wards were overcrowded, unavoidably so it seemed, and there was more septicæmia than usual. For the first time in his life the writer learned to know the appearance of septic eruptions, although he had seen an abundance of septic diphtheria before. Among the children were many sore fingers, reddened about the nails. A few patients had red purpuric spots on the body as large as the thumb-nail. Others had an eruption closely resembling that of scarlet fever, but which, in the writer's opinion, was not due to that disease. This eruption did not follow the regular march of scarlet fever from above downward, and the punctate spots were larger and quite purple. None of these patients lived long enough for desquamation.

When, at last, enough admissions were refused to reduce the number of patients to the normal, and the wards were cleansed, these eruptions suddenly ceased to appear. He recalls one child, desperately sick for weeks, getting well, his improvement beginning on the day that he was moved from a small, crowded room to a bed in a large ward, where the morning sun streamed over him. The change for the better in each twenty-four hours was marked, and this was the only alteration in treatment. When the season was so far advanced that convalescents could be sent and the beds of some who were not convalescents moved to the eastern piazza for the morning, and their dinners sent there, there was again sudden general improvement. Of course, this might take place in any disease, but the known destructive power of sunlight on diphtheria bacilli ought to be considered in connection with it.

It has been of interest to the writer to determine whether enlarged cervical glands and general infiltration of the neck were best treated by poultices or by ice-bags. After close observation of a large number of patients, he advances no opinion as to which method causes these symptoms to disappear soonest; but a decided opinion that one or the other generally gives comfort, and that the large majority prefer the poultice, while a smaller number distinctly prefer the ice-bag.

Local applications to the throat are sometimes highly useful, although perhaps their importance is less than that of the general treatment. They are commonly made by gargles, swabbing, or spraying. The author has had little experience with gargles in diphtheria; swabbing is always objectionable to children. It frightens them and leads to a struggle, with corresponding waste of strength. If done gently, it is sometimes preferred by adults, especially by those with very sore throats. Spraying seems the only practicable way of making these applications to children; but whether for children or adults, spraying should be done with the greatest gentleness. The mechanical irritation of a powerful spray is often extremely painful to an angry, swollen throat, quite irrespective of its composition; and the complaints of pain caused by certain sprays depend more upon the manner in which they are used than upon anything else. There are times when any application, or even the opening of the mouth, is painful, and there are adults who have decided preferences between the swab and the spray. There is no reason for not consulting their preferences.

Peroxide of hydrogen has been used by the writer largely as a local application. It has probably been overestimated, but it is of value. It is not the injurious drug it has been said to be. For instance, it has been reported that solutions of fifty, fifteen, or even seven and a half volumes are caustics. The author thinks it probable that these statements, as applied to the throat, must have originated in the use of a different peroxide from that which he employs, or from a violent manner of use. It has not been his experience with the fifteen-volume solution furnished by the hospital or bought at various drug-stores in Boston. Children, as a rule, do not complain of it in spray, although they will not tolerate that or anything else applied with swabs. The same child will make no objection to the fifteen-volume spray in the mouth, will say that it does not hurt, and complain of the three-and-a-quarter-volume in the nose. As a rule, adults say that even the fifty-volume spray does not hurt the mouth, although there are exceptions. Some even say that it is a relief to have the mouth cleaned with it. Complaints of the fifteen-volume spray are very rare. Constant use of the fifty-volume spray is apt to redden the mucous membrane, although it is not sure to do so, and therefore used in that strength it is probably an irritant. Being such, its continual use may possibly prolong the existence of the membrane. Some membranes last a long time with very little treatment, just as others disappear soon.

The writer sprayed his own throat thoroughly with a fifteen-volume solution bought of an apothecary, and it caused no pain, although there was a slight sensation of effervescence. A fifty-volume solution procured at the hospital, and thoroughly pressed on absorbent cotton into the inside of the cheeks and lips until it began to be swallowed, caused very slight tingling, which lasted longer than the application. The same specimen rubbed into his wrist caused severe pain. Dropped upon the hand, it bleached it for thirty-six hours.

He repeated these experiments upon himself with another specimen, made by a private apothecary by boiling down the weaker solution of a different manufacturing chemist, and got identical results. The difference in the sensation in the mouth and on the hand was in each case most marked. Observe that the application to the hand and nose is painful, but in the mouth the effect is much milder. Possibly a rapid dilution with saliva may account for the difference. It is to be observed that all the writer's reports of the fifty-volume spray

were when the application had been made by a trained nurse with great gentleness. He thinks that we may conclude that the fifty-volume spray, while seldom a caustic, is too strong for routine use, if the object is merely to clean the mouth and not to exterminate the bacilli. Of its use for the latter purpose we will speak later. Second, any appreciable strength is too strong for the nose. It has the additional disadvantage that it probably penetrates the nose less far than most applications, because it fills the nostrils with foam sufficiently to prevent the passage of a gentle spray. Third, there is no objection to the use of fifteen-volume solutions in the mouth.

The peroxide of hydrogen removes any bad odor from the parts it touches, and it cleans the dirty membrane, leaving a white, instead of a gray or yellow, surface. It does this almost immediately, and it probably does it by oxidizing and disintegrating the surface of the membrane. It appears that this is an advantage; that by removing a certain amount of *débris*, we must remove a certain amount of the danger of sepsis, and this quite irrespective of whether bacilli are destroyed by the reagent or not. If, as is said to be the case, they are destroyed, so much the better. The author has known a large piece of membrane, placed in a fifteen-volume solution immediately on being coughed up, to become completely disintegrated in about two and a half hours, and another in a fifty-volume solution in an hour. So long an exposure does appear to be practicable in the throat, very often in one patient. If the treatment consists in a short application only, the gross appearances are the same, whether the fifteen- or fifty-volume solution is used.

When this drug was first introduced for diphtheria in the City Hospital, internes and nurses then on service in that department, and who had seen many different applications, became immediately enthusiastic over the new spray. The author had been using corrosive sublimate (1 to 15,000), as he had formerly used salicylic acid and other washes, and it appeared to him that he had found something better. In 1892 he divided the service into four parts, according to the location of beds, treating the throats in one with fifteen-volume peroxide of hydrogen, in another with corrosive sublimate (1 to 15,000), a third with Dobell's alkaline solution, and the fourth with a spray of boiled water. In a few days the throats treated with peroxide of hydrogen and those treated with corrosive sublimate were in general so much the cleaner that the other two sprays were withdrawn. It took longer to decide between peroxide of hydrogen and corrosive sublimate, but in a week the general difference in appearance between the two sets of throats was such that the writer withdrew corrosive sublimate and made the use of peroxide of hydrogen general. It has the additional advantage of being purely local in its effect. He has twice known corrosive sublimate to salivate when used in weak spray. The nature of the diphtheria mouth is such, too, that mercurial poisoning is harder to detect than in syphilitic mouths, for instance.

There is advantage in disinfecting the mouth when there is much membrane; peroxide of hydrogen is practically such a disinfectant, perhaps technically so, and it is one of the best, perhaps the best, at our command, but its uses should be confined to the mouth and what can be reached through the mouth. This is speaking of the weak solution.

It has been claimed that by prolonged applications of the strong solution the membrane can be removed and the progress of the disease cut short. That the membrane can be removed is true. That the progress of the disease can be cut short is improbable, except in cases where all the bacilli are still on the surface. The writer has not observed that the use of this strong spray every two hours for a few minutes at a time exerts any influence on the duration of the disease. Certainly, cases will continue for a long time, even when such treatment is begun immediately on admission to the hospital. Neither does this two hourly treatment practically remove the bacilli in those cases in which it is continued after the disappearance of the membrane. They may continue to be found for weeks, in spite of the treatment. He has seen a highly septic mouth become steadily less septic during three days because of the hourly use of the strong solution, it having been previously getting worse, but that this was at the expense of great prostration due to manipulation. He has not tried to repeat this observation on any other person.

ANTIPYRIN IN PRURITUS.

F. ARNSTEIN (*Gazeta Lekaeska*, No. 48, 1894, p. 1298), following Blaschko's recommendation (*Berlin. Klin. Wochenschr.*, No. 22, 1891), has tried antipyrin internally (in powder, 1 gramme at bedtime) in two severe cases, one of which was that of a woman, aged twenty-eight, with pruritus nervosus of three months, referred to a woman, aged sixty-six, with inveterate pruritus senilis. In both the itching quickly subsided, to disappear alto-

gether in a couple of weeks. Both of the patients had been previously treated by various ordinary methods without obtaining any relief whatever.—*British Medical Journal*, February 23, 1895.

TOBACCOISM AND ITS TREATMENT.

In the *American Practitioner and News* for February 23, 1895, KEMPF tells us how he treats the tobacco habit and its results:

A belladonna porous plaster is put over the region of the heart, and—

Bromide of sodium, ʒii;
Fl. ext. cactus grandiflora, fʒi;
Fl. ext. pulsatilla, fʒss;
Fl. ext. passiflora incarnata, fʒss;
Water, fʒiv. M.

Sig.—A teaspoonful, after shaking, in water every four hours; and—

Aloin, gr. ¼;
Strychnine, gr. $\frac{1}{60}$;
Belladonna ext., gr. ½;
Ipecac, gr. $\frac{1}{10}$. M.
A pill.

Sig.—From 2 to 3 pills at bedtime.

The writer also gives the patient the elixir of gentian and chloride of iron, to be taken after meals. After a few days the patient can go to work, though suffering from severe tobacco heart. He has no trouble in giving up tobacco.

In all cases the best plan is to stop the use of tobacco at once. Nine times out of ten the patient will not miss the tobacco after several days of abstention. The diet should be regulated, and any local trouble, such as nasal or post-nasal catarrh, dyspepsia, and tobacco heart, should be treated with appropriate remedies. The following is one of the best tonics to give the patient:

℞ Gold and sodium chloride, gr. $\frac{1}{24}$;
Strychnine nitrate, gr. $\frac{1}{60}$;
Nitro-glycerin, gr. $\frac{1}{600}$;
Atropine, gr. $\frac{1}{300}$;
Tr. digitalis, ♏iii;
Oleoresin capsicum, ♏$\frac{3}{4}$. M.
A tablet.

Sig.—1 four times a day four hours apart.

The elixir of iron, quinine, and strychnine, or the aloin, strychnine, belladonna, and ipecac pill may be indicated in some cases. In all cases where the craving for tobacco proves troublesome, or where there are symptoms of nervous derangement, or where the will-power is deficient, or where the heart is functionally deranged, or where the patient thinks he ought to take a nervine to help him quit the narcotic, give him the bromide of sodium, cactus, pulsatilla, and passiflora mixture, as already prescribed.

THE TREATMENT OF DIPHTHERIA.

V. A. MOLTCHANOFF, of Schluesselburg (*Vratch*, No. 1, 1895), lays stress on the fact that the death-rate of epidemic diphtheria may oscillate without any relation whatever to the treatment employed, and that a low mortality was not unknown in the pre-serum days. The author himself recently (between October 9 and November 22, 1894) observed a local outbreak of croupous and septic diphtheria, attacking thirty-nine persons, with thirty-one (79.5 per cent.) recoveries. Of the patients, twenty-seven were aged from one to fourteen; five of them died. The remaining twelve were from fifteen to forty years old; three of them (adult men) succumbed to the disease. The treatment consisted in local application of $HgCl_2$,$FeCl_3$, tannin, boracic acid, salicylate of sodium, etc., internal use of stimulants, light fluid food, and rest. Twenty cases were treated in the hospital, with four deaths, one of the patients dying an hour and a half after admission; nineteen in private practice, with as many deaths. Of the eight fatal cases, five (two adults, three children) occurred in the beginning of the epidemic. The same thing has been observed by the author in every one of the sixteen epidemics of diphtheria he came across previously in the course of his country practice; in each instance the initial period presented an enormous mortality in comparison with subsequent stages of the outbreak.

In conclusion, the writer appeals to all medical men, especially to those practising in the country, inviting them systematically to publish statistical facts relating to all epidemics of infectious diseases which happen to come under their observation.—*British Medical Journal*, February 23, 1895.

THE TREATMENT OF CHOREA, WITH ESPECIAL REFERENCE TO THE USE OF QUININE.

KNAPP has tried this method of treating chorea with scant success. He records his results in the *Boston Medical and Surgical Journal* of February 28, 1895, and concludes as follows: To sum up, in one case there was complete recovery in a week after treatment was begun, and in a second in three weeks; but, although this is rather a short time, it is not very remarkable for chorea to recover in that period. The third case recovered after being under

treatment ten weeks. In five cases the quinine treatment proved ineffectual and arsenic was substituted, with distinct benefit in the majority of cases. With the exception of Case I., which recovered in a week, the results are neither remarkable nor satisfactory.

During this period Dr. Wood had published the results of experiments on animals, and had been putting his hypothesis into practice, reporting his results at a meeting of the Association of American Physicians in May, 1893.

In studying canine chorea, Dr. Wood, in common with other observers, found that the movements continued after section of the spinal cord. He therefore concludes that the seat of the morbid process in chorea is in the cord. Although in chorea the motor function of the cord is somewhat impaired, he holds that the inhibitory motor function is still more impaired, that Setschenow's centres are too weak to arrest the voluntary movement as soon as its end is attained, and that in consequence the movement goes beyond the normal limits. Atropine paralyzes the inhibitory function of the cord and quinine stimulates it, and, in the first paper cited, he showed that the choreic movements in the dog were enormously increased by atropine and completely checked by quinine.

In the second paper he gives the application of these theories. In six cases of canine chorea he gave quinine, with the result that in every case the movements were inhibited, and that in four cases the dogs recovered, canine chorea being usually a fatal disease. In two cases of chorea in children he gave quinine in doses of 9 to 24 grains daily for seven and a half weeks, one case recovering and one case being greatly improved. He reported eleven other cases communicated to him by others. In nine cases (in two of which arsenic had failed) the patients recovered in from three to fifteen days, after taking 9 to 25 grains of quinine daily. In two cases quinine failed and arsenic was substituted; one of these cases did not improve at all, the other recovered.

These results are more satisfactory than the author's, but they are hardly conclusive. In a certain number of cases of chorea very good results might be obtained, probably, by removing the child from the bad hygienic surroundings in which it lives, by giving a liberal and nourishing diet, instead of the tea, candy, and bread on which so many of them feed, by enforcing as absolute rest in bed as can be attained, and by judicious hydrotherapy, without the aid of drugs. Nevertheless, we cannot regard chorea as a self-limited disease, in spite of the recent theories as to its nature to which the author later refers, for in only too many cases the trouble is protracted and may even become chronic. He has never yet tried a purely expectant treatment, and believes that in many cases the attack is much relieved and shortened by the ordinary drugs in use, notably, of course, arsenic.

The ordinary methods of treatment will in many simple cases be followed by complete or nearly complete recovery in from four to ten weeks, and therefore the results in a part of these cases treated by quinine are no better than the results in other cases. He admits, however, that he has not seen recovery under other forms of treatment inside of a week, so that the cases collected by Dr. Wood are of more weight in supporting his theory than his own cases or the writer's.

It is not probable that the use of quinine in chorea can be justified on the hypothesis of its action in stimulating the inhibitory motor functions of the spinal cord. That quinine may be of benefit as a tonic is, of course, evident, and it may have some influence upon the toxin that produces chorea. Chorea, however, cannot be regarded as a spinal disease. The pronounced cerebral symptoms—insomnia, irritability, headache, mental failure—and the distribution of the choreic movements, which are so often found to affect one side or even one limb predominantly, would of themselves point to the cerebral origin of the disease, even without the evidence afforded by autopsies, which have shown the most marked changes in the cerebral cortex, although the basal ganglia and the cord itself have not been exempt. Choreic movements are not uncommon as a result of structural brain-disease, but they are rarely, if ever, seen as a symptom of diseases of the cord. In canine chorea, on the other hand, which is not proved to be the same as human chorea, the changes are chiefly in the cord. It is possible that in some cases, such as those reported to the American Neurological Association in 1890 by Weir Mitchell, the morbid process may affect chiefly the cord, but such cases are rare.

It is, furthermore, possible that in the future we may differentiate several affections which are now called chorea. Huntington's chorea and the electric chorea of Dubini are now fully recognized as distinct diseases, having no connection with the ordinary chorea of childhood,—Sydenham's chorea. Evidence is accumulating that in most cases of Sydenham's chorea we have to do with a disease of microbic origin, and the researches of Berkeley,

Dana, and Pianese have done much to confirm that belief. Other cases, including some of the rather rare cases which are alleged to be due to fright or to irritation, may be of hysterical origin. In chorea of microbic origin, the toxin probably exerts its chief influence upon the brain cortex, especially in its motor region.

The hypothesis on which quinine is recommended for the treatment of chorea seems to the writer untenable, and the therapeutic results are based thus far on too few cases to warrant us in ascribing greater virtues to this drug than to arsenic. Not having the idea at the time of publishing the results of this very imperfect trial of the drug, the results of one season's trial did not seem to the writer of sufficient value to lead him to try it in his private practice or in his subsequent terms of service at the hospital, and he went back to his former custom of supplementing the rest and regimen with full doses of arsenic, associated, if necessary, with iron or other tonics, and, in case of great motor disturbance and restlessness, with sulphonal or other sedatives.

THE USE OF ALCOHOL IN DIABETES.

HIRSCHFELD (*Berl. Klin. Woch.*, February 4, 1895) discusses the question as to when alcohol in moderate quantity should be allowed and when altogether prohibited. The author does not agree with the view that alcohol may be an etiological factor in the production of diabetes. In cases of diabetes closely investigated he found that the addition of a small quantity of alcohol (30 to 70 grammes per diem) had no ill effect. The quantity of nitrogen in the urine was only temporarily increased. With the use of alcohol more fats could be taken, and hence the increased feeding is made more easy. In two cases with some albuminuria the addition of alcohol led to no increase in the albumin, but in one case the opposite fact was noticed. The sugar was noted at the beginning sometimes to be diminished, at other times to be increased, but the original level was arrived at later. No change was noted in the acetonuria. In cases where there is already cardiac weakness or vascular disease, alcohol should be used cautiously; there is no danger of increasing the polyuria. Alcohol is a food-stuff, and yet it may possibly injure the heart vessels or kidneys. Cases are then given illustrating the different points in treatment. Beer is forbidden, as it contains the most extractive matters, which are chiefly carbohydrates. If a certain amount of these latter are to be allowed, they are much better given in bread and vegetables. All sugar containing liquors and sweet wines are, of course, forbidden. Wine, cognac, certain forms of brandy, etc., may be allowed. The author concludes that 30 to 70 grammes of alcohol are thoroughly consumed in the body in these cases, that it does not interfere with the secretion of the urine or the absorption of food, and that metabolism is only temporarily increased. The general nutrition, however, is improved. Alcohol has no definite action on the tissue-changes peculiar to diabetes. The state of the heart vessels and kidneys should be borne in mind. The use of alcohol is only necessary in severe cases in order to ward off as much as possible, by overfeeding, the falling off in strength and the development of tuberculosis.—*British Medical Journal*, February 23, 1895.

THE TREATMENT OF ACUTE PERITONITIS.

Writing on this subject, GANT, in the *Ontario Medical Journal* for February, 1895, first points out that the feeding is important. The stomach is not in a position to receive nourishment, and what is taken usually remains unchanged and is returned unutilized. Let the patient have as little food as possible by the mouth, and some ice to quench the great thirst, and trust more to rectal feeding.

Opium and morphine should be given as sparingly as possible, and should not form part of a routine treatment. They hamper treatment and mask symptoms.

Aperients, within the last few years, have been revived chiefly by Mr. Lawson Tait. His treatment has been spoken of as "the treatment of peritonitis by aperients," as if it could be used with advantage in every case. What Mr. Tait says is, "I have never said that purgative treatment will cure peritonitis, for, once it is established, peritonitis is a practically incurable disease and almost uniformly fatal."

There is no doubt that there is within the intestine in these cases an amount of noxious matter which becomes septic as soon as the normal condition of the bowel is interfered with, and that these matters can, within certain limits, be got rid of by aperients and enemata. It has been pointed out by Mr. Tait that if an action of the bowel can be obtained at the outset of the symptoms, either by the administration of a purgative or enema, the trouble, in a large proportion of cases, passes away and the patient makes a good recovery; but a purgative, like an emetic in acute poisoning, can only arrest symptoms within certain limits.

Once general peritonitis has established itself, an aperient is without avail.

Operative measures are represented by incision, drainage, with or without irrigation, and, more recently, puncture or incision of a distended intestine.

Generally speaking, we have two series of cases to treat. In one there is a vigorous, well-defined inflammation, the local symptoms are marked, pus is produced in greater or lesser amounts, and the exudation localized. Examples of this are: peritonitis started from appendix trouble, pelvic peritonitis, and also certain cases started from injury or perforation. In the other series the peritonitis is diffused, the constitutional symptoms are more prominent than the local, the changes in the serous membrane are comparatively slight, and are out of proportion to the general disturbance. This form is illustrated by cases of general septic intoxication starting from the peritoneum, puerperal peritonitis, etc.

In the first series of cases surgical interference by incision or drainage ranks with the opening of a large abscess.

In the second series the incision, flushing, and drainage are comparable to washing out the stomach after an acute poison has been taken.

In the one case we have to get rid of the products of a limited inflammation; in the other, we have to rid the cavity of a poison which has already done much harm and is causing a progressive poisoning.

In cases of localized purulent peritonitis an incision should be made into the collection by the most direct route. When the pus has escaped, a drainage-tube is passed to the bottom of the cavity and a dressing of some absorbent material applied.

Treves says that he has seen no advantage attend either the fuller evacuation of the pus by squeezing or immediate irrigation of the cavity; that he is confident harm may be done by scraping the wall of the inclosure, by persistent searching for a diseased appendix or other cause of trouble, and by stuffing the exposed space with gauze. At the end of twenty-four or thirty-six hours, irrigation of the cavity may be commenced and continued twice daily, and now and then a little iodoform emulsion introduced.

Gilbert Barling, of Birmingham, in the *British Medical Journal* of last January, reports eleven operations with four deaths. In summing up, he says, "Incision in the middle line, irrigation, and drainage is a simple procedure, and carries with it little risk, and it is a question whether it is resorted to as often as it should be. The profession is, perhaps, fully alive to its advantages, when a very acute onset such as perforation can be recognized; but when the commencement is less acute and the symptoms less alarming in the early days, then it is doubtful if drainage is adopted as often as it is called for. When the inflammatory collection is localized, it is well not to do too much. Simple incision and drainage suffices; anything like forcible irrigation or searching about with the fingers, by disturbing limited adhesions, is likely to do harm." He says that if a perforative focus is discovered, it should be dealt with directly, and even if an incision has been made over the appendix, at the same time median section should be performed for irrigation and drainage of the general cavity.

In cases of generalized peritonitis the procedure adopted must depend upon the cause and degree of the trouble. If the exudation be serous, Treves says it will suffice if the fluid be evacuated, the peritoneum dried in the most dependent parts with gauze sponge, and the abdomen closed without drainage.

When the exudation is sero-purulent or purulent, it is in most cases desirable that the cavity be irrigated after washing the depths of the peritoneal cavity, and dried, as far as possible, with sponges, iodoform powder dusted over the portion of the serous membrane most involved, a long drainage-tube introduced, and the abdominal wound closed. Any treatment directed against the cause of the peritonitis will be independent of these measures.

There are cases in which the peritonitis is more plastic in character. The intestines are found matted together with grayish lymph, which may be present in considerable quantity. The breaking down of these adhesions is certainly distinctive of a desirable process of repair. Still, when it is indicated that the cause of peritonitis has to be searched for and imprisoned exudation between the intestinal coils to be set free, this freeing of adhesions must to a certain limited extent be carried out. A stump of adherent intestine will often cover and protect a perforation and the lymph close it with much more speed and security than sutures. Treves says, "As the surgeon reaches what appears to be the starting-point of peritonitis (plastic), he must proceed with the utmost caution, and be not only prepared but inclined to have the actual *fons et origo mali* undemonstrated."

The main purpose of the operation is to allow a noxious exudation to escape, and, if possible, free the peritoneum of the cause of trouble. Some of the best results in perforated

peritonitis have been obtained in instances in which the exact site of the perforation was never ascertained. Kaiser gives six examples with five recoveries.

In this class of peritonitis neither drainage nor irrigation seems to be regarded. The peritoneum is dried with gauze sponges and iodoform dusted over the serous membrane most affected.

The subject of irrigation in peritonitis has received much attention. So many questions come into play,—such as the nature of the exudation, serous or purulent or fæcal, whether it is well localized or diffuse, and the condition of the patient, whether able to stand a prolonged operation or not,—that it is not surprising that opinions are divided as to its advisability. Treves said last March that the bias of opinion was against irrigation. Pearce Gould, last October, in a paper on "Operative Treatment of Perforated Ulcer of Stomach and Intestine," said cleansing of the peritoneum was the important step in the operation. No time or care must be spared to make this flushing absolutely thorough, as upon it chiefly hangs success or failure. Roderick Maclaren, on the same subject, at the British Medical Association meeting last October, said, "Cleansing of the abdominal cavity is all-important. Success depends almost entirely on how this is done."

Gilbert Barling believes in a very thorough flushing. Ford Cousens says the cavity must be cleansed at all risk, but prolonged irrigation must be avoided. Knowlsley Thornton, in speaking of diffuse septic peritonitis, at the Royal Medical and Clinical Society, last October, said "that septic material spread over the surface of the gut rendered thorough irrigation absolutely necessary;" and at this meeting there was not one opposed to this method of treatment. Once having septic material in the peritoneal cavity, it seems that, if we care to stop the spread of the peritonitis, it must be got rid of. In Germany it has been done by wiping the surface with aseptic gauze. In England flushing is preferred. The former method is rough, tends to do more damage, and cannot be as effective as irrigation. Certainly it might be used when there was a septic deposit; but for a thin layer of septic serum, or sero-pus, spread over a large part of the peritoneal surface, it would be ineffective and possibly harmful, both to the tender peritoneum itself and to any occlusive adhesions formed by nature, should a perforation be the starting-point. The danger in irrigation seems to be that the septic material may be washed to distant portions of the peritoneum; but is not this spreading of the peritonitis one of the bugbears, in fact, our chief danger? and should the poison be got rid of, the trouble ceases, or rather, we have a simple localized inflammation to deal with. Should the patient be in a condition of collapse, and not able to stand prolonged and thorough irrigation, then more speedy but less effective measures would have to be adopted.

As to the fluids used, they are many: carbolic acid solution, boric acid, corrosive sublimate, and salicylic acid solutions. Many use boiled water, and some a weak preparation of alcohol. But whatever solution fluid is used, it cannot be used as a germicide, and all that can be aimed at is a solution that is sterile and non-irritating. Perhaps the choice is between a sterile .6-per-cent. salt solution and boiled water at 110° F.

The fluid is introduced at low pressure, and in a wide stream, with a soft rubber tube, regulated with a clip; the peritoneal cavity to be gently flooded out, and by a movement of the hand and pressure here and there the fluid overflows by the wound.

TREATMENT OF ASCITES.

FINSEN (*Ugeskrift für Laeger*, Nos. 38 and 39, 1894), who for ten years had suffered from ascites (due to congenital heart-affection and hydatid of liver), and had tried all usual remedies in vain, attempted to "dry up" his ascites by bringing as little fluid as possible to the system. For nine days he took only four hundred grains of fluid in the twenty-four hours, with the result that three or four days after commencing the dieting his diuresis increased in quantity from eight hundred cubic centimetres on the first day to eleven hundred to twelve hundred cubic centimetres on the third to the fifth day,—an amount which he had not passed for years. At the same time the other distressing symptoms disappeared. He has since been able to keep his ascites in check by being careful not to imbibe too large quantities of fluid, and when he finds it increasing again, adopting a dry regimen. By way of experiment he once brought on an ascites in ten days and got rid of it in another ten days. When the ascites was great and the diuresis small, the treatment was slower in taking effect. When the diuresis was eight hundred cubic centimetres it was easy to get rid of the ascites by a not very severe diet; but of late years, when it has often been only four hundred to five hundred cubic centimetres, the author has had to be much stricter in his

dieting. He found by experiment that when the diuresis was five hundred cubic centimetres he had to drink three hundred cubic centimetres less daily to get the same result as when it was eight hundred cubic centimetres. To expedite matters, he has of late years combined the dry dieting with 7- to 8-gramme doses of light magnesium daily or every other day, and was able to free the system from seven hundred to eight hundred cubic centimetres of fluid by purging only. In spite of this treatment, the author was able to carry on his work. He also tried 5-gramme doses of chloride of ammonium and dry dieting, but, though less exhausting, this method was not so rapid as dry diet and magnesium. As regards the increase in the diuresis, which was almost in inverse proportion to the fluid imbibed, the author is inclined to think that, whenever there is a retention of fluid in the body in open connection with the lymphatics, absorption from it will not commence until the blood has reached a concentration requiring dilution. As a rule, the increase of urine began first a few days after the commencement of the dieting, and these first days were the most distressing, with great thirst, dry tongue, and salt taste of the saliva. As soon as the diuresis began—generally on the third or fourth day—these symptoms disappeared. It must be assumed that the blood during the dry diet becomes concentrated, and when it has reached a certain degree of concentration the absorption begins from the lymphatics, and it would seem as if the absorption, having once begun, becomes more and more easy. And by the commencing absorption of the ascites the diminished intraperitoneal pressure on the liver and kidneys allows a freer passage of blood through them. It is well known that after tapping an ascites or anasarca, a diuretic which previously had no effect now produces diuresis, which might be explained in a similar way.—*British Medical Journal*, February 16, 1895.

TREATMENT OF CASES OF DEAFNESS WITHOUT PAIN OR DISCHARGE.

GRANT's lectures on these topics are being published in the *Medical Press and Circular*. In one of them he tells us first of the treatment of impacted cerumen. He recommended the use of a fine-pointed syringe (preferably one with a side tube for filling and a two-way stop-cock) under good illumination, the patient's head being fixed and the usual well-known procedure being followed. In skilled hands he advised the previous employment of a blunt hoe for the purpose of loosening the plug from above. For the less skilled it was advisable to soften the plug by means of glycerin or soda drops. He cautioned his hearers against too much energy in removing plugs of cerumen which were not interfering with the hearing power. For cerumen complicating hyperostosis or exostosis of the meatus, an extremely fine gum-elastic tip was placed on the point of the syringe, for the introduction of soda drops and the subsequent washing out of the ceruminal or epithelial accumulation.

In acute Eustachian catarrh the general treatment of a "cold" was to be carried out. He advised the application of menthol to the nasal mucous membrane in very strong (ten per cent.) or very weak (1 grain in 1 ounce) solution in olive oil or parolein by means of a spray or a swab, or as a palliative in urgent cases, hydrochlorate of cocaine (two and a half per cent.), with due caution. If the naso-pharynx was not too tender, the strong menthol solution might be applied to the mouths of the Eustachian tubes by means of cotton-wool on a suitable bent holder from behind the soft palate. Gentle inflation of the tympanum should then be practised by Politzer's method during swallowing or during the puffing out of the cheeks, or by Valsalva's method, the mouth and the nose being filled with steam from a pint of warm water containing benzol (5 minims), or compound tincture of benzoin (1 ounce), with either of which might be incorporated a drop of chloroform, the whole being more easily miscible if there be added a small quantity of light carbonate of magnesium or of tincture of quillaia. If the deafness persisted, the treatment became the same as that of chronic exudative catarrh of the middle ear. In this the naso-pharynx demanded the greatest attention. Discharges, if excessive, had to be cleared away by a warm alkaline lotion injected from the anterior nares by means of a fine-pointed syringe or douche, or from the posterior by a suitably bent tube made to fit on the aural syringe. The application of astringents to the naso-pharynx was to be made as above described. They might consist of chloride of zinc, in solution of the strength of 15 to 20 grains to 1 ounce, or—a very pleasant formula for children—equal parts of glycerin of alum and syrup of mulberries. Inflation of the tympanum should be practised by one or other of the methods already described, but only so long as it produced progressive improvement. As soon as the hearing remained stationary, inflation should be left severely alone until some retro-

gression of the hearing power called for its readoption. Dilatation of the Eustachian tubes would be effected by the air-pressure induced by the inflation, or by means of astringents applied to the orifice through the naso-pharynx, or to the interior by means of the Eustachian catheter. A few drops of a weak solution of chloride of zinc (1 grain to 1 ounce) are introduced into the catheter, and are then blown into the tube by means of the air-bag. Very good effects are produced by the injection of liquid vaseline-parolein, containing a grain of menthol in the ounce. This may with perfect safety and considerable advantage be carried into the tympanum by means of a fine gum-elastic tube pushed through the catheter for about one inch beyond its tip. Celluloid bougies (at most one millimetre in diameter) may be introduced through the catheter to produce vital dilatation, or electrolysis may be employed if the practitioner has skill in its use. If fluid in the tympanum fails to disperse under the action of inflation, the membrane should be punctured. Stiffness of the malleo-incudal joint calls for gymnastics by means of Siegel's suction speculum, relaxation of the membrane for the application of contractile collodion, and redoubled efforts to dilate the tubes by other means rather than by inflation. Thereafter multiple incisions or cauterizations would be called for. For paresis of the tubal muscles (indicated by obstruction on inflation by Politzer's method and patency to the Eustachian catheter), local faradization was necessary. Internally, tonics, aperients, and chalybeates as required, but especially chloride of ammonium (flavored with bicarbonate of sodium, liquid extract of licorice, lemon, and chloroform-water), were to be administered. Of the utmost importance was the treatment of adenoid growths in the naso-pharynx, hypertrophies, polypi, septal outgrowths, and other obstructions in the nose, or diseases of the accessory sinuses.

The "Eustachian self-inflator" was recommended as affording the patient a simple means for inflating his own tympanum with the vapor of chloroform (combined with a small proportion of acetic ether). It removed the risk of fresh catarrh, which so often followed the use of inhalations of steam.

In the sclerotic form, if unmistakable, treatment was of little or no use, but any abnormality in the naso-pharyngeal or Eustachian structures should be vigorously attended to. Benefit was sometimes obtained from the prolonged administration of small doses of calomel or gray powder, especially in respect of the troublesome tinnitus. Light diet, avoidance of damp, and residence at a high altitude were particularly advised.

In cases of persistent quiescent perforation, cleansing with absorbent wool, insufflation of small quantities of boric acid, and the use of a cotton-wool artificial drum (Yearsley's) was recommended. The entrance of moisture into the ear was to be particularly avoided. Cicatrices, if relaxed, were to be treated in the way recommended for relaxed membrane.

With regard to the various forms of "nerve-deafness," labyrinthine effusion (Ménière's disease) called at first for rest, quiet aperients, and the free administration of bromides, followed by a mild, cautious course of pilocarpine. Should ultimately the vertigo become so troublesome as to overshadow the deafness, quinine should be administered. Patients subject to attacks should on the slightest premonitory symptom take an aperient dose of calomel (Stephen Mackenzie). If traumatic, the ice-bag is the main stand-by, iodides or mercurials being administered later on. In sudden nervous deafness from mental shock and in hysterical deafness, the appropriate general treatment and local electrical stimulation were indicated. Syphilitic disease of the labyrinth in the secondary stage was best treated by pure specifics, followed, if necessary, by pilocarpine. In the tertiary stage, pilocarpine might be employed in the first instance for a fortnight, then continued or not, according to its effects, along with free exhibition of iodides, etc. In the hereditary form the chief reliance was laid on supportive measures,—cod-liver oil, syrup of the iodide of iron, and, only experimentally, on pilocarpine. Acute inflammations called for depletion,—cold, counter-irritation, pilocarpine, and, later, mercurials or iodides. In chronic nerve-deafness, that due to exposure to noises—"boiler-makers' deafness"—required, above all, avoidance of the cause,—machinery, shooting, etc.,—the protection of the ear by means of cotton-wool, and occasional administration of bromides. Anæmic nerve-deafness (possibly a neutritis analogous to the optic neutritis of anæmia) called for iron, ammonia, and particularly nux vomica or strychnine in large doses; congestive nerve deafness for purgation, light diet, and bromides.

In regard to the pilocarpine method of treatment (cases of the abuse of which were very frequently met with), it should invariably be carried out in such a way that the patient might change his underclothing or remain in bed for two hours, so as to avoid the risk of most injurious chill. "Ambulatory" pilocar-

pine treatment was most strongly deprecated, home administration, under the supervision of the general medical adviser, being infinitely preferable.

FLUID EXTRACT OF SENECIO JACOBÆA.

MURREL, who has carefully studied the action of this drug, finds that it is analogous in action to the permanganate of potassium; that it is an energetic stimulant of the menstrual function.

In functional amenorrhœa it is indicated, especially in those cases where the menses have previously been regular, but have suddenly stopped through a taking cold. The return of the menstruation occurs, in the majority of these cases, after ten to fourteen days of treatment.

The fluid extract of senecio not only makes the appearance of the menses regular, but also increases their amount. Where there is anæmia in conjunction with the amenorrhœa, this drug is without effect.

It is prescribed as follows:

℞ Ext. fluid. senecio Jacobæa, ʒi.
Sig.—20 drops four times a day in water.

THE DIGESTION OF FARINACEOUS FOODS IN YOUNG INFANTS.

The Berlin correspondent of the *Medical Press and Circular* writes that Heubner has recently given an address on this topic.

He said the generally accepted belief that in infants under six months of age there was no provision for the digestion of farinaceous foods was erroneous. Schiffer had found that when starch had been kept in the mouth of an infant five minutes the saliva did convert the starch into sugar. Twenty-eight experiments had been made of collecting the ptyaline secretion from the mouths of infants and testing the action outside the body, the children all being under nine days old. Of these twenty-eight experiments, twenty-seven gave positive results. In a third series of experiments an extract from the glands was made use of, extracted as quickly as possible after death. In this way it was possible to determine the functions of the special glands. In a child only a day old, traces of ptyaline were found in the salivary glands; but, on the other hand, no trace of it was found in the pancreas in children of ages up to three weeks. A fourth method of investigation was by examination of the fæces of children that had been fed on starch. The starch was found least in children of ten to sixteen months old, but even earlier in life a very little was found.

The experiments made justified the assumption that new-born infants, but certainly children of some weeks old, secreted material capable of converting certain quantities of starchy food. The reluctance to give starchy food to infants lay rather in the daily experience than in physiological data. Practical experiments, however, were in favor of the digestibility of starch in early life, for, if Jacobi recommended a mixture of one part of milk and five of barley meal, his experiments must have taught him that the mixture was digestible. As there was a doubt on the point, he thought it should be decided by investigations. He had carried out these in conjunction with Dr. Kastens, of Leipsic. After an interval of several hours after the last time of feeding with milk, starchy food was given to children, and in exactly the same intervals as the milk food. The starch period extended over two days. The fæces were carefully collected and dried, and the sugar constituents determined by reduction with copper, and thus the quantity of undigested starch in the motions. The first child, seven weeks old, had thirty grammes of rice flour in twenty-five hours, and the analysis of the fæces showed not a single trace of changed starch; it must, therefore, have been wholly digested. In a second child, forty weeks old, fifty-three grammes of flour were given, equal to forty grammes of dry starch. The first stool containing the starch fæces was passed in eighteen and a half hours. The evacuations contained .1687 gramme of dry starch. This child, then, which was, in fact, dying, completely digested forty grammes of starch. The examination post mortem confirmed the result. A third experiment was made with a child a year old. In forty-eight hours seventy-nine grammes of dry starch were given in the form of rice meal with butter; 79.7 per cent. of the starch introduced was digested. A similar result was obtained with oat flour.

Notwithstanding these experiments, however, Professor Heubner had to support the judgment pronounced against the use of such starchy foods. Short experiments like those related were no proof that such food could be borne for months together. But even if that were the case, calculation would show the disadvantage of such a style of feeding. Rice meals could, at the most, be given in a seven-per-cent. solution. With a higher percentage, the mixture was so thick that the child could not take it. More than one litre of liquid

could not be given daily to a two-months'-old child without injury. In twenty-four hours, therefore, sixty grammes of rice flour could be given, equal to one hundred and seventy-five calories. But a child at the breast would daily take in four hundred and ninety calories,—a result that could not be reached with two litres of rice gruel. Prepared foods were not much better. They could be given in a rather more concentrated form, up to ten-per-cent. solutions. If one hundred grammes of Nestlé's food were taken, it would equal four hundred calories, and thus would require a bulk of one and a quarter to one and a half litres to give it in. Such a style of feeding would be accompanied by considerable inconvenience. The quantity of Nestlé's food stated did not contain the corresponding quantity of albumin, and far too little fat. Finally, it was relatively too expensive.

ACETANILIDE AS A DRESSING.

MORTON writes in the *Polyclinic* of February 16, 1895, that the action of acetanilide upon wounds, especially granulations, when used in full strength, is to produce intense dryness, blueness, and to check at once and to prevent the formation of pus. Upon extensive granulating surfaces and chronic ulcers a slight burning sensation is at first perceived, which is rapidly succeeded by a sedative or anæsthetic effect. If used in sufficient quantity, a thin scab of acetanilide, combined with the wound secretions, forms, under which healing rapidly progresses. If a very large surface is exposed to the action of the undiluted drug, toxic symptoms promptly supervene in susceptible individuals. It is probable that children and the aged are more sensitive to its absorption than are vigorous middle-aged persons. It is also probable that anæmia might follow too prolonged application of large quantities of the substance, because of its destructive action upon the red blood-corpuscles; this, however, he has not seen. The powder does not, as a rule, stick to wounds or hold dressings fast; but when it does so, alcohol causes instant release by dissolving the drug.

Under no circumstances does acetanilide irritate the skin or wounds, even when used beneath impervious protectives or antiseptic poultices.

What may be the best vehicles for applying acetanilide must yet be proved. Upon most of his cases the pure powder was used from a dusting-box. This, while usually safe, he thinks has been an unnecessary waste, for very recent experiments in dilution have shown him that a one-fifth- to one-per-cent. mixture with petrolatum was sufficient to arrest suppuration and secure rapid healing in an extensive septic scald. All pain vanished after the first application.

When absorption of the drug has been desired, it has been used, either pure or mixed, with an easily absorbed agent, such as lanolin. When employed for purely local effect in ointment form, he has usually prescribed a drachm to the ounce of petrolatum.

Acetanilide dissolves in five volumes of alcohol, in twenty volumes of ether, and in two hundred volumes of water. It is soluble in liquid petrolatum to the extent of forty grains to the ounce. In chloroform it very freely dissolves. What powders will prove best as diluents it remains to be proved, but boric acid does not appear to interfere with its action.

By diluting with water a saturated alcoholic solution of acetanilide, the drug will be thrown out of solution in the shape of fine crystals, and will remain perfectly mixed in suspension long enough to permit of its use in this form as an injection for abscesses or carbuncles, in gonorrhœa, etc.

He has used acetanilide gauze in many cases in which iodoform gauze would previously have been indicated. This gauze was made after the glycerin and soapsuds formula, for iodoform gauze of a strength of ten per cent., by the nurses at the Pennsylvania Hospital. At present several of the manufacturers of surgical dressings are making the gauze by several formulas and of various strengths for experimental purposes. He believes that for the average wound requiring packing a very weak gauze will prove satisfactory and safe.

In the large number of cases in which he has freely employed acetanilide, but twice have toxic effects been noticed; one was in an infant aged fourteen months. He had excised the hip for tuberculosis, and packed with iodoform gauze. Upon re-dressing a few days later, the iodoform was replaced by ten per cent. acetanilide gauze. Four hours later the temperature dropped five degrees, and there were great pallor and feeble pulse. The temperature rose upon withdrawal of the acetanilide. The second case was one of superficial suppurative scald of arms, chest, legs, and head in a man aged fifty-seven years, who had for six days been dressed with boric acid ointment. About two drachms of finely powdered acetanilide were dusted over the surfaces at twelve o'clock noon. At 5 P.M. the patient became blue, respirations somewhat accelerated, pulse

slow and very compressible; face and extremities covered with cold perspiration; temperature normal; mind clear. All acetanilide was at once removed. At 8 P.M. he became maniacally delirious and intensely blue. He yawned to such an extent as to dislocate the lower jaw several times. Beginning with the first symptoms of poisoning, he was freely stimulated with digitalis and whiskey, and at midnight of the same day was again in normal condition. The delirium, of course, may in part or wholly have resulted from the whiskey. Practically no suppuration took place afterwards, and he was soon sent home well.

He has found that all ordinary suppuration ceases in the presence of acetanilide, even when much diluted, in a manner equally astonishing and gratifying. Abscess cavities, boils, and carbuncles, when opened, and dirty, greasy wounds, produced by machinery or upon the street, have healed, as a rule, without further suppuration, and in an unprecedentedly short time after acetanilide has been applied, in the form of either pure powder, gauze, ointment, or dissolved in alcohol, water, or oil, as an injection. Sloughing septic lesions have been trimmed up, dusted with acetanilide, and saturated without drainage, yet have frequently healed by primary union. Clean wounds have been likewise freely dusted and saturated, and have healed similarly, thus proving that the drug does not interfere with healing in the absence of sepsis. So slight is the secretion of wounds so treated that many extensive ones have been healed under the collodion scab.

Tuberculous lesions appear to be affected in a much better manner by acetanilide than by iodoform, probably, in large part, as in other wounds and conditions, by the intense dryness of the surroundings depriving the bacilli of their required pabulum. Tuberculous bone cavities have healed rapidly under acetanilide gauze (ten per cent.).

A number of fistulas have instantly taken on a healthy appearance after injection of alcoholic, watery, or oleaginous solutions of acetanilide, and have quickly closed.

Suppurating joints freely dusted with the drug after opening have ceased to form pus, and under the subsequent packing of the wounds with acetanilide gauze have healed with excellent functional results. In acetanilide he believes that we have the safest dressing to ward off the infection of joints subsequent to operation through wounds, persistent fistulas, etc. It would appear that pus microbes cannot exist in the presence of the drug, and that skin bacteria do not multiply in its proximity.

In compound fractures the use of the agent is obvious, and the results, so far as prevention of sepsis goes, are excellent.

As yet he has not injected suppurating or tuberculous joints, or acute or cold abscesses, with the substance, but is about to commence some experiments in this promising direction.

Upon chancroids the effect of acetanilide is, perhaps, most surprising of all. These troublesome sores heal almost instantly under a crust of the agent. At the Out-Patient Department of the Pennsylvania Hospital, during the past two months, he has been able to study the effect of acetanilide upon a large number of such cases, as well as upon other venereal irritations about the genitals. All of these soft sores and inflammations have uniformly healed in from one to seven days, with a single exception. This one was of a phagedenic nature, and required cauterization by nitric acid before it would heal under the acetanilide. His habit at present is to prescribe a drachm of powdered acetanilide and direct the patient to wash several times daily, and subsequently to rub in the dry powder. If the sore is beneath the prepuce, he is instructed to leave a quantity of the drug inside. Presence of the powder prevents excoriations by urethral discharges. The entire absence of odor from the drug is especially gratifying to venereal patients.

Syphilitic chancres and condylomata are usually much improved by the dry powder, and some are promptly cured. Secondary and tertiary ulcerations are stimulated by the drug, and, when thus relieved of the septic element, are prone to more rapid cicatrization.

External and internal rectal affections are instantly benefited by applications in the form of powder or by ordinary cocoa-butter suppository containing two or three grains of the drug. One case—a child with an ulcer of the rectum—complained of pain after full-strength powder was used. Irritable or inflamed hemorrhoids are at once relieved by this suppository, as a rule. Fistulas about the anus heal very well when split open and packed with the gauze.

Ingrowing toe-nails rapidly lose their irritative element when painted with the alcoholic solution and packed with cotton containing the powder.

In injuries of the head, involving bleeding from the ear, he has packed the external auditory canal with pure acetanilide, in order to prevent the invasion of the inner ear or brain by sepsis from without.

Before experimenting with this drug it had been his custom to paint suture lines, after closing a wound, with a saturated solution of iodoform in ether, in an attempt to sterilize the surrounding skin of its normal bacilli. This has given way to the saturated alcoholic solution of acetanilide, with the effect of almost always preventing stitch abscesses.

He has seen much to lead to the belief that in acetanilide we have at last found a substance which will either destroy or render inactive the normal bacteria of the skin by its absorption into and through the epidermis. A few facts point likewise towards the possibility of controlling certain inflammations of the lymphatic and superficial tissues by contact with the drug during absorption from the surface into the economy.

Finally, it should be pointed out what great possibilities of usefulness this drug may have in first aid to the injured in factories and mines, upon railroads, in ambulance service, and upon the battle-field.

THE TREATMENT OF INTESTINAL OBSTRUCTION.

Physicians and surgeons are still far from agreed on the precise indications for surgical interventions in cases of intestinal obstruction. The physicians, on the one hand, point to numerous recoveries from the most desperate plight, obtained, or, at any rate facilitated, by purely medical means, while the surgeons attribute the comparatively large mortality which follows operations undertaken for the relief of this condition to the fact that the patient does not come into their hands until medicine has done its worst, and the conditions have become so unfavorable that all the skill in the world must often prove ineffectual in averting the fatal termination. The subject has come up for discussion several times during the past few weeks without apparently bringing us any nearer a *modus vivendi*. One variety of intestinal obstruction which has received special attention is the comparatively rare form in which the obstruction is due to the impaction somewhere in the intestinal canal of one or more gall-stones. Although the idea of surgical intervention naturally occurs to one as the speediest and most certain plan of affording relief in this condition, there are numerous instances on record in which persons, apparently on the verge of dissolution, have unexpectedly recovered, the calculus having at last succeeded in finding its way past the seat of obstruction. As it can only in very exceptional cases be possible to diagnose the exact nature of the condition previous to the operation, the question of the treatment of this precise lesion does not often suggest itself either to the physician or the surgeon, the latter only being enabled to ascertain the nature of the obstruction when he has cut into the abdomen. In any event, cases of death from impacted gall-stone are so rare that many surgeons in active practice have never met with a single example, and the various museums attached to our medical schools contain few, if any, pathological specimens illustrating the morbid appearances. Statistics appear to teach us that surgical intervention in desperate cases holds out very little hope of a successful issue, and until cases have become surgically desperate, physician and patient alike are loath to abandon the usual measures in favor of the laparotomist's knife. A dispassionate review of such statistics as are at present available seems to justify the assertion that less lives would be lost by strict adherence to medical treatment to the bitter end than would be saved by early surgical intervention. Undoubtedly the majority of cases of intestinal obstruction from all causes yield to the milder plan of treatment, and the complications which are so frequently present in the severer cases are but too apt to nullify the surgeon's skill. Moreover, as a matter of fact, the question of medical *versus* surgical treatment cannot be said to present itself, except in a few large towns which are fortunate to possess surgeons with the experience and courage to undertake such operations with a reasonable prospect of a successful issue. In the country, public opinion would not sanction immediate resort to laparotomy, and practitioners, whatever their individual proficiency, would hesitate to incur the responsibility of advising or performing such operations. A gall-stone in the intestines is a troublesome guest. Even when it does not forthwith bring about a crisis, it is apt to set up attacks of intestinal obstruction from time to time, either by becoming impacted in the ileo-cæcal valve or by causing spasmodic contraction of the irritated walls, or, as in two cases recently published by Mr. Mayo Robson, of determining volvulus. Cases such as these are of necessity only amenable to surgery, and when this is not obtainable, must end fatally. Even when the surgeon discovers the nature of the obstructing body, the question remains, What ought he to do with it? Shall he try to push it along the canal until it has cleared the ileo-cæcal valve, shall he endeavor to break it into pieces by needling through the coats of the irritated intestines, or is he justified

in incising the gut and removing the stone through the aperture? When it can be forced or coaxed through the valve it would appear to be tolerably safe to leave to nature the task of expulsion, but when it comes to choosing between needling and removal through an incision ad hoc, few surgeons would hesitate to prefer the latter, recent advances in intestinal surgery enabling this to be done without adding materially to the patient's risks.—Editorial in *Medical Press and Circular* of February 6, 1895.

A METHOD OF DIMINISHING THE INCONVENIENT EFFECTS OF THE IODIDES.

Erhlich and Kroenig showed in 1885 that the combination of sulphanilic acid with the iodides converts the harmful and nascent nitrites found in the saliva and nasal secretions into inoffensive products.

VALENTIN has shown latterly that we possess in this drug an excellent remedy for certain symptoms of acute catarrh. Thus, in acute coryza, the redness and swelling, with profuse discharge, are notably diminished or completely aborted after a few hours by its use. In acute laryngitis and otitis media the drug has an action, but it is less certain, the pain alone being diminished in the latter disease. The influence upon catarrhal conditions is not a permanent one, and it is necessary to repeat the dose at the end of twenty-four to forty-eight hours.

It is given as follows:

℞ Acid. sulphanilic, ʒiiss;
Sod. bicarb., ʒii;
Aq. dest., fʒx. M.
Sig.—A dessertspoonful in water twice a day.

Or as follows:

℞ Sodii sulphanilat., ʒiiss;
Aq. dest., fʒviss. M.
Sig.—3 teaspoonfuls twice daily.

—*La Médecine Mod.*, March 23, 1895.

THE FLUORIDE OF SODIUM IN INFANTILE TUBERCULOSIS.

In a recent communication to the Academy of Medicine of Belgium, DR. BOURGOIS made the following summary of the conclusions which he had arrived at in his studies on this subject:

1. The purified fluoride of sodium possesses an especial action on children that are either predisposed or already have tuberculosis. The results obtained persist. In many cases the cure remains many years.

2. The dose which he employed varied from $\frac{1}{640}$ to $\frac{5}{64}$ grain per diem. It should be less the more chronic the condition.

3. As soon as the effects of the fluoride are noticed, which happens very frequently in a short time, the dose is decreased, returning to the former dose if the amelioration does not continue. This is necessary if one wishes to obtain good results.

4. In the administration of this drug to children he has never noticed any inconvenience worthy of mention. It is an inoffensive drug, which is well tolerated by children.

THE CITRATE OF CORNUTINE.

This salt is a soluble dark-brown powder, while the pure cornutine is an amorphous brown powder, very difficult to dissolve, and consequently little used.

According to the researches of KOBERT, this drug is the active principle of ergot in its action upon the uterine tissues.

According to L. LEWITZKY, cornutine, in doses of $\frac{5}{64}$ to $\frac{10}{64}$ grain, administered by the mouth, is one of the most certain drugs to arouse the uterine contractions, both during the confinement and afterwards in congestive and hemorrhagic forms of metritis.

THOMPSON has had good results by using the drug subcutaneously, in doses of $\frac{1}{32}$ to $\frac{1}{8}$ grain, in cases of metrorrhagia and menorrhagia following endometritis, as well as in metritis and in diseases of the ovaries.

P. KROHL believes cornutine to be indicated in all obstetrical operations, especially a short time before Cæsarean sections and in cases of atony of the uterus after artificial delivery, after the evacuation of embryos and macerated fœti, after rapid deliveries of a greatly distended uterus where there is atony, in subinvolution where the lochia continue blood-stained; finally, in puerperal endometritis in connection with vaginal and intrauterine injections. Cornutine is contraindicated during gestation and during the periods of dilatation and expulsion where there is feebleness of the contractions.

A. MEISEL has had equally good results with cornutine in daily doses of $\frac{1}{6}$ grain, taken at three doses, in urethral hemorrhage, and also vesical and uterine. According to this observer, the citrate of cornutine has produced cures in divers cases of paralytic spermatorrhœa. It acts in these cases by diminishing the medullary irritability, and particularly that of the genito-spinal centre. It acts also directly on the secretory organs, diminishing the secretion. In the majority of cases it sufficed

to give this medicine for six, eight, or fourteen days to suppress completely the flow of seminal fluid.

It may be given in the following manner:

℞ Cornutine, pure, gr. ½;
Argil, gr. xlv;
Aq.,
Glyc., of each, q. s. M.
Ft. pil. no. xx.

Sig.—Two pills to be taken three times a day (for obstetrics).

℞ Cornutine citrat., gr. iiss;
Argil, ʒi, ϑii;
Mucil. gum. trag., q. s. M.
Ft. pil. no. l.

Sig.—One pill to be taken twice daily (for spermatorrhœa).

—*La Méd. Mod.*, March 23, 1895.

THE THERAPEUTIC VALUE OF EPHEDRA VULGARIS.

This drug has acquired in Russia a popular credence which the accurate researches of M. X. N. Vesternik (*Vratch; La Méd. Mod.*, March 16, 1895) would seem to show are without foundation. The *résumé* of these results is as follows:

1. Ephedra vulgaris is not an indifferent drug, although it is not very harmful.
2. The infusion has a slight sudorific and diuretic action.
3. In small doses it stimulates intestinal peristalsis.
4. Its antirheumatic action is doubtful.
5. Its cardiac action is not worth mentioning.
6. The claims made for it have been greatly exaggerated.

TREATMENT OF PULMONARY TUBERCULOSIS.

J. Crocq (*Méd. Scien.*, March, 1895) employs the nitrate of silver in combating the local inflammations which tend to provoke the extension of the tubercular diseases. He prescribes it in pills containing $\frac{1}{20}$ to $\frac{1}{6}$ grain three or four times daily or in pills of $\frac{1}{8}$ grain twice a day. The argentum nitrate may be associated with other drugs, as morphine, extract of colombo, and extract of gentian. Ergotine is also prescribed, either associated with the nitrate of silver or alternating with it, in doses of 7 grains to 1 drachm *pro die* in solution, or in pills (1½ to 3 grains) three to five times per day. The author usually prescribes one for fifteen days and then the other, and associates with the use internally of nitrate of silver the external application of revulsives.—*Rev. Int. de Méd. et de Chir. Pratiques*, April, 1895.

THE TREATMENT OF DELIRIUM, CEPHALALGIA, AND INSOMNIA IN TYPHOID PATIENTS.

In regard to the treatment of the delirium which is intimately associated with the cephalalgia of typhoid, Le Gendre (*Bull. Gén. de Thér.*, November 30, 1894) says, that in all cases where cold baths are tolerated, these are the best means of treating this symptom. The bath should be one gradually cooled, but if this cannot be employed, a five-minute cold bath with cold douching of the head may be substituted. The marked change in the patient is striking, and the return of rationality, but after being placed in bed he may again relapse into delirium; cold should in consequence be kept constantly to the head in the form of cold compresses or cloths wrung out of water containing vinegar and ice, frequently renewed.

All methods that tend to reduce temperature tend to reduce the delirium. When, in spite of these measures, the delirium becomes intense and the patient does not sleep and attempts to arise, calming medicaments should be employed; by order of preference, opium, chloral, bromides, always governed by the condition of the organism.

If the heart is suspected, chloral should only be employed guardedly, or even not at all.

Intense albuminuria, with diminished amount of urine and a tendency to constipation, are the contraindications to the use of opium.

The contraindication to the bromides is the intolerance of the stomach. If none of the drugs are contraindicated, they may be employed in combination.

The delirium which appears in the third week is generally in connection with weakness,—a cerebral ischæmia. This is combated most effectively by insisting on the use of most nutritious drinks, as peptonized beef juice, milk, alcohol, and strong wines.

Certain forms of delirium should be called delirium of medication,—that is, those caused by the excessive administration of alcohol in certain wines that are too stimulating (champagne), quinine in too great or too frequently repeated doses, salicylic acid, caffeine. The diagnosis in these cases is made by the appearance of the delirium after each dose of medicine. This suspicion can be proved by stopping or diminishing the amount employed.

Cephalalgia, when it is due to gastro-intes-

tinal irritation, may be relieved by treatment of that condition. When, however, it is accompanied by an elevation of temperature, cold wet compresses should be kept upon the shaved head; sometimes vinegar or ether may be added to the water; cold douches on the head and neck during the bath; finally, when there are permanent symptoms of congestion, the ice-bag should be used. Guéneau employs sometimes inunctions of,—

℞ Cold cream, ʒv;
Potass. cyan., gr. iss or gr. iii. M.

This is rubbed into the forehead, care being taken to avoid dropping it upon the conjunctivæ.

Graves treats these cephalalgias by warmth in fomentations, made of folded cloths wrung out of warm water which contains vinegar, and covered over by oiled silk, and renewed every three or four hours.

Insomnia usually persists for the first week, ceasing under the influence of warm or cold baths. If the patient does not sleep at night, but does during the intervals between the baths in the daytime, medicines are not necessary.

When the insomnia continues beyond the second or third week, its cause should be sought in some of the surrounding conditions, as the bed, the ventilation, too great warmth, or a disagreeable odor.

Of the hypnotics, opium is the best, combined, in some cases, with camphor to combat the after-effects.

℞ Opii, gr. ss;
Camphoræ, gr. iss to gr. iiss to each pill.

Bromides may be also associated with the opium. Chloral should be avoided wherever there is a weakened heart. Quinine sometimes acts as an hypnotic, if given in sufficient dose.

THE TREATMENT OF LUPUS BY PARACHLORPHENOL.

ELSENBERG (*Rev. de Thér. Médico-Chir.*, 1895) bathes the surface of the lupoid ulceration with alcohol, and then with ether or a concentrated aqueous solution of carbonate of potassium, and then applies to the diseased surface an ointment made up of equal parts of lanoline, vaseline, amidon, and parachlorphenol. Sometimes he adds a little chlorate of potassium. This ointment he allows to remain on for from ten to twelve hours, removing it with dry cotton, and then applying a salicylated or iodoform ointment. Two days later a second application of the parachlorphenol ointment may be made, and other applications at the same interval. After the series is ended, a plaster is applied for ten days, generally until the end of the reaction is reached. The parachlorphenol produces the cicatrization of the ulcerations, the diminution of the lupoid foci, and the formation of a new epithelium; it destroys rapidly the soft masses undergoing necrosis, and suppresses thus in part the morbid tissues which constitute the source of the later extension of the disease. Further, it arrests the development of new nodes. The parachlorphenol is painful in its action.—*Rev. Int. de Méd. et de Chir. Pratiques*, April, 1895.

TREATMENT OF BRIGHT'S DISEASE.

General hygiene and the hygiene of the alimentary tract are considered by SAPELIER (*Bull. Gén. de Thér.*, November 30, 1894) to constitute the chief and best therapeutic measures in the treatment of this disease. Medicaments are only of secondary or occasional importance. This treatment must be insisted on with great severity, and the patient's friends and family should be made aware of the fact that much depends on the strict observance of the rules laid down.

General Hygiene.—Whenever there are marked acute symptoms the patient should be put to bed. The patient should sleep only between woollen or flannel sheets. It is uncomfortable, perhaps, for a day or two, but the patient soon becomes accustomed to it. When dyspnœa prevents rest in bed, great care should be taken to prevent the patient from taking cold. Woollen should be always next the skin of the patient.

Southern climates are preferable in winter, with great care not to expose themselves during the mornings and evenings; while in the summer they should not visit the sea-shore. Woollen next the skin not only prevents taking cold, but also slightly stimulates the action of the skin. This stimulation may be increased by the use of frictions with gloves made of horse-hair, which the author advises to be given every morning over the whole body.

Warm baths and vapor baths are to be avoided, as the chances of chills are very great. If rest in bed is not indicated, and there is no œdema to prevent walking, the patient should take moderate exercise, but not sufficient to fatigue. The author would prohibit the use of the bicycle in all cases. Walking and riding are the only forms of exercise. Where these are not possible, massage should be employed.

Marriage should be prohibited in women, or, at least, pregnancy in those having Bright's disease, and moderation in the sexual life of men. Tobacco is also an enemy of patients suffering with this disease; if it does not act directly upon the kidneys, it acts upon the heart, already menaced.

Alimentary Hygiene.—Milk is the food and medicine *par excellence* in Bright's disease. It should constitute the sole food during acute exacerbations and the principal drink at all other times. The amount taken should not exceed two and a half quarts per day; it can be either boiled or not, hot or cold, as the patient prefers. It should be taken in small quantities every two hours, slowly, in swallows, to break up as much as possible the curds formed in the stomach. If necessary, instead of cow's milk, as usually employed, ass's or mare's milk or kumiss may be substituted; or a little tea or coffee to flavor may be added. The addition of stimulants should be avoided; while certain aromatics, as orange-flower water, may be employed. If the digestion of the milk is difficult, Vichy may be employed, or the following may be made use of:

> Tr nucis vomicæ,
> Tr. star anise, of each, gtt. xv to xx;
> Syr. simplicis, f℥iss;
> Aq. f℥iii. M.
>
> Sig.—One tablespoonful with each portion of milk.

And at the same time a pill of pancreatin.

In short, it should be the effort of the physician to impress upon the patient and those about him the fact that milk is the foundation *sine quâ non* of treatment; that without it nothing can be accomplished. The diet should be confined as nearly as possible to this. They may be allowed, however, cream, egg-flips, soups with bread or vermicelli, or with meal, prepared with milk, fresh cheese, a little stale bread or crackers. On the first symptom of a relapse, immediate return should be made to a milk diet; this is the one rule that should govern the hygiene of the patient suffering from Bright's disease.

When the symptoms of disease have been absent for some time, a vegetarian diet may be inaugurated. The regimen may then include purées of all farinaceous materials, all doughs used as food, all flours or artificial mixtures of flours, all green vegetables prepared with butter or milk, eggs (preferably the yolks), fruits (preferably cooked), bread and crackers. The drink should be preferably milk, about two to three quarts per day. If milk cannot be taken, pure water or hot aromatic drinks alone are allowed,—tea or Paraguay tea.

When even the menace of subacute attacks no longer exists,—that is, a relative condition of health has been obtained,—the diet may be made more liberal yet by the addition to the vegetarian diet of the white meats. Fresh pork is most easily tolerated by the diabetic patient, while veal is least easily tolerated.

These are the substances which may be tolerated in the diet of the nephritic patient. Let us consider those that must be avoided. They are stale or fermented cheese, black and red meats, game, all forms of pork other than fresh pork, bouillon (a veritable solution of ptomaines), all meat juices and extracts, all forms of fish and of shell-fish.

All these foods are dangerous, either on account of their nature, the putrefaction more or less advanced, which easily may escape detection either by taste or smell, and they always contain a more or less large quantity of toxins. These toxins which the kidneys cannot eliminate are the constant danger of the nephritic patient; they should not be taken in, if it be possible to avoid them.

Alcohol is universally condemned in these cases; beer is useful; some physicians permit the use of wine in the periods between attacks; it is not, however, necessary to life and should be avoided. Liquors and all strong alcoholics should be prohibited.

Pharmaceutical Therapeutics.—Of all the drugs which have been used in this disease the author would retain digitalis, caffeine, theobromine, and perhaps the iodides, with the addition of the revulsives and venesection.

The duty of the physician in these cases, after prescribing the milk diet, is to relieve the system of its toxins by the administration of a purgative. The activity of the purgative should depend on the necessity for immediate action, or, if the symptoms are not marked, milder purgation may be employed. Whenever the acute or subacute symptoms reappear, purgation should again be resorted to. Salines the author has found are often not well tolerated, and he prefers to use scammony in capsules, in doses of 7 to 9 grains, or even, when the case demands, as high as 15 grains. It is easily taken without being tasted, and has but a slight tendency to produce cramps, and he considers it the preferable purgative in these cases.

At the same time that relief is sought through the intestine, counter-irritation should be applied in the lumbar region over the kidneys, in the form of sinapisms, wet or dry cups, or super-

ficial touches with the actual cautery. Vesicants and the tincture of iodine should be avoided.

In case of acute symptoms, as uræmia of a nervous type, acute delirium, epileptiform convulsions, coma, violent dyspnœa, in addition to these measures, bleeding should be used. By the removal of ten to fourteen ounces a notable quantity of uræmic poison is removed. Applied properly in certain cases, bleeding renders invaluable relief to diabetics, and it should not be forgotten.

If the heart is weakened, besides the measures already mentioned, the hypodermic injection of caffeine is indicated. The following solution should be employed:

℞ Caffeinæ,
Sodii benzoat., of each, gr. lxxv;
Aquæ, fʒvss. M.

Sig.—Inject subcutaneously 15 minims,—that is, each injection contains 4 grains of caffeine.

The absorption is much more rapid and less irritant by this method than when taken into the stomach. If there is œdema, the heart is dilated, the pulse small and weak, digitalis is indicated.

Except in cases of acute attack, the entire treatment should be hygienic. In the case of patients who have, in addition, an arteriosclerosis, the iodide of sodium, in a daily dose of 7 to 15 grains, should be taken for three weeks of each month.

In closing, the author reiterates that *milk* is the most certain and inoffensive of diuretics in these cases.

A METHOD OF RESTORING PERSONS APPARENTLY DEAD FROM CHLOROFORM.

LEEDHAM-GREEN, in the *Birmingham Medical Review* of February, 1895, under this title, writes of what is often called Maas's method, which was described in the *Berliner Klinische Wochenschrift* for 1892, in an article by Dr. Maas, of Göttingen. Little notice was taken of it at the time. It was, however, again brought prominently forward by Professor König at the Surgical Congress at Berlin in 1893. The method advocated was a slight but important modification of the well-known one suggested by Professor König himself. As originally practised by that professor, the operator, standing on the left side of the patient and facing him, placed the ball of the thumb of the opened right hand upon the patient's chest, between the place of the apex-beat of the heart and the sternum. He then repeatedly pressed in the thoracic wall with a quick, strong movement, at the rate of thirty times to the minute.

Dr. Maas was led, through the following incident, to modify the procedure in one particular, and thereby greatly to enhance its value: A boy, aged nine years, while under chloroform for cleft palate, suddenly ceased to breathe; the pupils dilated and the face became cyanotic. He was at once treated by Professor König's method; but both pulse and respiration became gradually weaker, until at length they stopped altogether, and the boy was considered to be dead. Dr. Maas, who had been compressing the thorax at the usual rate, on learning that the respiration and the heart's action had entirely ceased, became excited, and commenced to compress the chest-wall very quickly and strongly (at about the rate of 120 to the minute), and in a short time was agreeably surprised to observe the pupils contract and to detect faint attempts at respiration. Although the boy's life hung in the balance for fully an hour, during which time this quick compression had to be continued, in the end he recovered.

Since that time the quick compression of the præcordium has invariably been used in the Göttingen clinic and with the best results. While acting there as assistant to Professor König, Leedham-Green had several opportunities of testing its value, and was much struck with its efficacy in case of heart-failure. But the most striking instance of its efficiency that he has met with was one in which he had occasion to use it a few weeks ago. The circumstances of the case were these: A healthy child, four months old, was under operation for circumcision in the out-patient room of the Queen's Hospital. The child took the chloroform at first very well, and, the operation being almost concluded, the lint on which the chloroform had been given had been laid aside for a moment or two. Suddenly the child became deathly pale, the pupils dilated, and the respiration and the heart's action ceased. The operation was instantly stopped, the head was lowered, and the tongue was pulled well forward. As the child made no attempt to breathe, artificial respiration (Sylvester's method) was energetically used. This proving ineffectual, the child was completely inverted for a few seconds, being held up by the heels. Sylvester's method was again tried, but without producing the slightest effect either on the breathing or on the heart. At this point Green happened to come into the room, just as the anæsthetist declared the child to be dead. He at once examined

the child and could not find any trace of life whatever. There was no impulse of the heart to be felt, nor was there the slightest effort to breathe; the surface of the body was pale and cold; the eyes were shrunken and the pupils widely dilated; at the mouth and nostrils a collection of froth appeared, together with some stomach contents, which had been forced up during the artificial respiration.

Although Green did not for a moment doubt that the child was dead, yet, in desperation, he at one commenced the rapid compression of the præcordium, as described above. For fully three minutes he worked away, apparently without result, during which time his colleague and he discussed the painful questions of informing the waiting mother and the unpleasantness of an inquest. Suddenly they were surprised and delighted to hear a faint gasp, followed in a few seconds by another. A little later they felt a weak heart-throb, and in a minute or two more the child began to cry, and all danger was passed.

The points of special interest to be noted in this case are (1) the length of time (seven minutes) during which neither heart-beat nor respiratory effort could be detected; (2) the inadequacy of Sylvester's method, inversion, or ether to re-establish the circulation and respiration, none of them producing the slightest apparent effect; (3) the complete recovery of the patient under the rapid and forcible heart compression.

There can be no doubt that the efficacy of König-Maas's method lies in its direct action on the heart, restoring not the respiration only, but the circulation also. If, on a fresh cadaver, the præcordium be quickly and forcibly compressed, it is easy to detect a distinctive pulse-wave in the carotid arteries, and the pupils will be found to contract as the blood fills the capillaries of the iris.

Although this method is naturally easier of application upon the flexible chest of a child than on the rigid thorax of an adult, yet age does not preclude its use. It need hardly be mentioned that provision must be made for the free entry and exit of the air to and from the chest.

A method so simple and rational, and withal so effective, Green feels sure only requires to be better known in order to be more generally adopted.

SKIN THERAPEUTICS.

CANTRELL (*Philadelphia Polyclinic*, April 6, 1895) states that, after an extended trial, amounting to one hundred cases in all, he cannot recommend bismuth subgallate, a drug introduced by Heiz and Liebreich, and by them applied to excoriations, intertrigo, and slightly moist eczema. He reaches the following conclusions in regard to it:

It is not superior to other iodoform substitutes. It is decidedly irritating. It does not hinder, but rather increases, discharges. It is a stimulant rather than an astringent; in fact, it acted almost as a caustic in one or two cases. It cannot take the place that has been allotted to it.

Alumnol, coming from the same authors as the former drug, was applied in the same class of cases, but proved more effective against these diseases. Chotzen advised its use as a powder of from ten to twenty per cent. and in varying strengths of ointment.

Gottheil also gives the record of sixty cases in which he had observed good results. The drug was applied in one hundred and one cases in Cantrell's clinic. In eczema and erythema intertrigo of an acute variety it acted well. In the more chronic forms of eczema, ulcers of a non-syphilitic type, in non-parasitic sycosis, in the tubercular syphilitic eruptions, and in scabies the drug was rather slow, but had a curative action. In tinea circinata, tinea versicolor, and in impetigo contagiosa it seemed to cure in a short time. In herpes zoster it acted as a protective only.

Very good results were obtained from the use of Labarraque's solution in ivy-poisoning. The lotion was applied undiluted or weakened one-half, and kept in contact with the affected region for some time. While the treatment of this affection by other remedies usually takes from ten days to two weeks, it was found that chlorinated sodium solution gave the desired result in from four to seven days, the patient experiencing relief almost as soon as the drug was applied.

Salol in dermatology has been made the subject of a number of papers. Its use was recommended in eczema, and especially in the chronic variety, in which it replaced salicylic acid. Good results were observed in vesicular and pustular types, in the squamous form and in eczema rubrum. In impetigo contagiosa, whether or not complicated with the presence of pediculi, the drug acted very well.

Concerning the vegetable parasitic diseases of the skin, the following conclusions were arrived at:

1. Salol proved beneficial to some extent in tinea circinata.

2. It did not show any tendency to cure in tinea sycosis.

3. It was positively proved of no service in tinea tonsurans.

4. It had a curative action in tinea versicolor.

An apparently curative result of salol almost immediately after its application in herpes zoster was reported by Billstein.

In the treatment of ivy-poisoning, 30 grains of salol should be dissolved in 1 ounce of liquid petrolatum, and the parts should be kept constantly covered with this application. In all the cases treated, recovery ensued in from three to six days.

Acetanilide ointments, in strengths varying from four to twelve per cent. with liquid petrolatum, and in solution of six per cent. with collodion, were used.

In cases of eczema, more particularly those of the acute type, it exerted a curative action. This was noted in the vesicular variety and in eczema rubrum, as well as in the seborrhœic type. It was also found to give beneficial results in cases of long standing, even when infiltration and thickening were present. In a number of instances occurring in silver and bronze workers, good results were noticed. In herpes zoster it gave much relief. In seborrhœa, pityriasis, and ulcers, both syphilitic and non-syphilitic type, it gave good results. In ivy-poisoning it cured a few cases very readily. Impetigo contagiosa was cured by the application of this drug, but the action was not so prompt as that of salol. In ringworms it was of some service in the circinate variety, but in the other varieties was not useful.

CONTUSIONS OF THE ABDOMEN.

KIRMISSON (*La France Médicale*, No. 14, 1895) calls attention to the difficulty in the diagnosis of intraperitoneal lesions incident to abdominal contusions. He states that the alteration in the quantity and quality of urine passed is sometimes of distinct value, but cites one case of Lefort's in which there was absolute anuria. Autopsy showed rupture of the intestine, but no injury of the bladder. Kirmisson holds that intervention should depend upon the gravity of the symptoms.

Reynier states that, in spite of unending debates upon this question, no conclusion has yet been reached which can guide the surgeon in deciding for or against operation. In most of Michaux's cases where laparotomy was performed, it was evident that recovery would have ensued without this procedure. He recently treated a patient six hours after a severe blow in the region of the stomach by a transverse bar. The man vomited and had a rapid pulse; two days later he was well. Chavasse has collected thirty-six cases of kick in the belly by a horse, thirty-five of which died.

Moty reports nine cases, with three deaths.

Kirmisson states that a man who has been kicked in the belly by a horse has one chance out of three of dying.

Delorme, in nine cases of contusion, saved seven without intervention. In the other two there were no symptoms which positively indicated surgical interference.

Kirmisson states that he has saved more than one-half his cases, thanks to intervention, although it is true that some cases were opened which might have recovered spontaneously. The laparotomy, he says, did no harm. He holds that intervention should be practised when there are sharp local pains and rapid elevation of temperature.

Reclus stated that he saw a patient kicked by a horse; eighteen hours later there was hepatic resonance, ecchymoses, pain, rapid pulse, and normal temperature. Operation was performed, showing acute peritonitis and rupture of the gut. Two days later the patient died.

INTESTINAL SUTURING BY MEANS OF MECHANICAL RINGS.

AMAT (*Archives de Médecine et de Pharmacie Militaires*, No. 4, 1895), discussing this question, states that Murphy's buttons would be the most desirable method of uniting divided gut, were they not too heavy, too large, too small as to the central canal, and with edges too hard. He therefore prefers the apparatus of Bonnier, which is simple in construction, easy of application, small in volume, large of calibre, and soft as to surface. It is true this cannot be readily sterilized, but it is placed in a medium and in contact with surfaces which are themselves not sterile. A modification of this apparatus is especially desirable for coaptation of longitudinal wounds of the gut or of the bladder. Even to the skilled abdominal surgeon, versed in all methods of suture, Bonnier's apparatus will prove useful. To the unskilled, required to act in an emergency, it is invaluable, and should form a part of military hospital equipment.

Bonnier's apparatus consists of two ferrules, each armed with rings of cork, and provided with a number of points with fish-hook extremities. Each ferrule is introduced into an end of the bowel, and the points are thrust through

from within outward and then driven into the cork of the opposing ferrule, thus holding the bowel in apposition.

OPERATION FOR RELIEVING PHIMOSIS WHEN COMPLICATING GONORRHŒA.

To relieve the constriction and at the same time avoid infection of the wound, WOODWARD (*New York Medical Journal*, February 23, 1895) advocates the following simple procedure, and exhibited a patient on whom he had performed the operation with satisfactory results before the Cleveland Medical Society.

The pubes, penis, and scrotum are shaved. The parts are then thoroughly scrubbed with a solution of bichloride of mercury (1 to 2000). Compress the glans penis, forcing the blood out, and dextrously slip back the prepuce over the corona glandis, converting the phimosis into a paraphimosis. Cleanse the glans and prepuce well with the same antiseptic solution, and have an assistant hold the glans wrapped in cotton wet with bichloride.

Place a rubber band about the penis near the base. Inject a four-per-cent. solution of cocaine subcutaneously, entering the needle and passing it down to and under the constriction, slowly injecting the solution during withdrawal. Pick up the skin with two forceps, and snip with scissors. Withdraw the foreskin to its fullest extent, bringing the constriction (junction of mucous and cutaneous surfaces) about a quarter or half an inch back of the corona glandis. Introduce subcutaneously a grooved director and pass down beneath the constriction. Under the director pass a tenotome flatwise until the constriction is reached, then turn the cutting edge up and gently sever the constricting band without cutting through the mucous membrane or skin.

Withdraw the instruments, remove the rubber band, check the few drops of blood, and close the wound with cotton and collodion, to prevent the absorption of any poison that may afterwards touch it. Lay one thickness of iodoform gauze over the glans, again compress it, and draw down the prepuce to its former position.

The opening in the prepuce is appreciably enlarged at the time, and this increases during the first three days.

To prevent œdema of the penis, bandage the organ snugly, swing the scrotum up over the abdomen, and give an opium pill the first two or three nights to prevent priapism.

The patient is now able to retract the prepuce at will, and daily dressings can be applied to the irritated membranes. The soreness disappears in a few days.

When the gonorrhœal discharge has entirely ceased, circumcision can be performed, if considered advisable; but in the cases where the operator has performed this operation, the opening in the prepuce has been rendered so large that there was no possibility of a phimosis occurring with any subsequent attack of gonorrhœa, and circumcision was not indicated. The operation is equally applicable to phimosis complicating chancroids. If the chancroid should be in the dorsal median line beneath the prepuce, pass the grooved director and tenotome at one side.

The wound in the skin need only be large enough to admit the tip of a grooved director, and the resulting cicatrix is almost invisible. The tenotome should be well bellied and have a keen edge.

THE STABILITY OF AQUEOUS SOLUTIONS OF BICHLORIDE OF MERCURY.

BURCKER (*Archives de Médecine et de Pharmacie Militaires*, April, 1895) finds, as a result of experimentation, that ordinary water causes an immediate decomposition of bichloride of mercury; that this decomposition steadily continues under the influence of air and light. This decomposition ceases or becomes arrested when air and light are excluded. Solutions of bichloride of mercury made in distilled water undergo only trifling decompositions, even when exposed to air and light.

GUILLOT (*ibid.*) examined the emergency packets made for the army. Each of these contained sterile gauze impregnated with bichloride of mercury, one-tenth of one per cent. by weight. He found that a reduction took place, the mercury being transformed to insoluble salt, so that in eighteen months no bichloride of mercury could be found.

THE PREPARATION OF CATGUT.

BISSELL (*Medical Record*, February 16, 1895) gives a *résumé* of the principal methods of preparing catgut, and calls attention to a method carried out by himself, for which he claims superior merit.

With the object in view of obtaining the most satisfactory method of preparing gut, not being satisfied with the results obtained by boiling it in alcohol, about two and a half years ago he communicated with most of the large hospitals of the country, asking their methods of preparation and the results obtained. Some indorsed the boiling alcohol

method, others stated that the results were doubtful, others used chemical solutions, and a few went so far as to say that catgut was unfit for ligature purposes. After experimenting with most of the formulas furnished him (requiring a period of about eight months), he concluded that gut prepared by maceration in ethereal solutions of bichloride of mercury gave the most satisfactory results, in that it rendered the gut sterile, never destroyed its texture or strength, and required no special apparatus for its completion. The probable originator of the ethereal bichloride solution method was Dr. John C. Schapp, of Brooklyn, and since then several men have experimented in that line. Dr. Louis C. Ager, of the Hoagland Laboratory, has made the following bacteriological experiments with pieces of gut prepared by such method. Dr. Ager took a number of pieces of catgut suture about an inch and a half long and sterilized them in an Arnold sterilizer for half an hour. These pieces were then soaked in an old sporulating culture of the anthrax bacillus for twenty-four hours. One piece was dropped into a tube of sterile beef-tea, and the others were put into an ethereal solution of the bichloride of mercury, about 1 to 1000. Those in the bichloride solution were removed at intervals of five, ten, twenty, thirty, and sixty minutes, washed in sterilized water, and dropped into tubes of sterile beef-tea. After sixty hours in the incubator there was a prolific growth in the control tube, but the others remained sterile. The writer performed similar experiments, taking pieces of raw gut and soaking for sixteen hours in a sporulating culture of anthrax. These pieces were then treated by a formula the details of which will be given later, washed in sterilized water, and each piece planted in culture media. In not one instance was there any growth after eighty-four hours in the incubator. The experiments of Dr. Ager would seem to show that five minutes in an ethereal solution of the bichloride of mercury (1 to 1000) is sufficient to sterilize catgut, but there is a certain error to be considered. He did not experiment with the oil-laden raw gut, and Bissell's experience has been that it takes at least six hours to complete the process of sterilization. Sterilized silk threads impregnated with the anthrax spore and then dipped in melted tallow, he found to be sterile after six hours' immersion in the bichloride solution. The bichloride method is as follows: place the raw gut, after removing all colored silk, string, etc., in a 1 to 1000 ethereal solution of bichloride of mercury, and allow it to remain there from six to twelve hours, depending on the size of the gut; then wind on sterilized glass spools and place the spool containing the gut in the same solution for six hours longer. Wash in pure ether, und then boil in absolute alcohol at atmospheric pressure for ten minutes, the object being to remove all traces of the bichloride. Gut prepared by this method is absolutely sterile.

It may be claimed that the bichloride solution weakens its texture; on the contrary, it hardens it, for gut prepared by this formula will remain longer in a wound before being absorbed than the same size prepared by the heat-alcohol method. The ethereal solution overcomes the protection the oil and fat have against the action of the bichloride, and the germicide has a clear field.

Several large hospitals use methods which carry out the principle of the ethereal bichloride solution to the extreme. It is their practice to place the gut in a much stronger solution for a greater length of time than that suggested. This is entirely unnecessary, because the more manipulating and the stronger the chemicals used to complete the process of sterilization just so much more possible chance you run of injuring the strength of the ligature.

In order to ascertain if the fat was mostly removed by this process, the author submitted a sample to Dr. Herbert M. Hill, professor of Chemistry at the University of Buffalo, and Dr. Hill reported that, after treating a prepared sample with ether at its boiling temperature for five hours and a half, he was able to obtain a little less than two per cent. of fatty material, the samples of raw gut originally containing about twenty per cent. by weight. Dr. Hill also treated a similar prepared sample by boiling it in absolute alcohol for the same length of time. He was not only unsuccessful in obtaining any fatty material by this procedure, but the gut actually increased in weight and was rendered so brittle that it was worthless.

The only valid objection to the above preparation of catgut lies in the fact that it takes at least twelve hours' and ten minutes' time for its completion, with perhaps thirty minutes' actual work. This method is superior to the others, in that it gives uniform results and there is no chance of mishap.

NITRATE OF SILVER IN THE TREATMENT OF CHANCRES.

GUYON (*Monatshefte für Praktische Dermatologie*, Bd. xx., No. 5) advises the solid stick of nitrate of silver in the treatment of chancres under the following circumstances: when in

the last stages of the ulceration granulation is sluggish or when the chancre forms a large, infiltrated, indolent mass, showing no tendency towards resolution. The nitrate of silver applied to these sores favors cicatrization.

TREATMENT OF PANCREATIC CYST.

RICHARDSON (*Boston Medical and Surgical Journal*, cxxxii.) reports a case of pancreatic cyst successfully treated by drainage. In two previous cases the drainage also proved effectual. In one the discharge grew gradually less and the wound healed in a few months; but in a year or two later the cyst reappeared. A second laparotomy was performed for symptoms of acute intestinal obstruction due to pressure upon the duodenum by the refilled sac. At the autopsy a large opening was found between the cyst and the stomach. The cause of death was acute obstruction. The third case, though of doubtful pancreatic origin, was cured by complete extirpation of the cyst. This patient was a child of thirteen months, who exhibited a tumor in the abdomen since birth. This rapidly increased in size, and embarrassed both ciaculation and respiration. The whole abdomen was filled by a fluctuating tumor, apparently arising from the left, supposed to be a hydronephrosis. The tumor was dissected from its attachments back of the peritoneum in the pancreatic space. There were numerous large vessels supplying it, and it was crossed by the splenic vein. The tail of the pancreas was spread out over the anterior wall of the tumor. Seven pounds of fluid were removed. Examination showed true pancreatic tissue in the cyst-wall.

It is probable that the pancreas was involved only from pressure behind. The child made a good recovery. Enucleation was rapid and easy. By avoiding the splenic vein and by tying the pedicle *en masse*, no hemorrhage ensued.

If the cyst can be easily separated from its attachment, it seems best to attempt such a procedure, in view of the possible reaccumulation of fluid with its remote dangers. Attempts at enucleation should be abandoned, however, as soon as it is evident that the cyst is so thoroughly incorporated with the surrounding pancreatic tissues that it can be separated only by cutting.

LOCALIZATION AND TREATMENT OF GALL-STONES.

LLOYD (*Birmingham Medical Review*, April, 1895) states that gall-stones are chiefly of two varieties,—those consisting mainly of bile pigments and bile salts and those of cholestearine. The former vary in color from yellow to black, and are opaque, soft, and usually multiple; the latter are usually more or less transparent. They are more common in females than males, and chiefly occur in child-bearing women at the later periods of life. There are no reliable therapeutic means by which gall-stones may be dissolved or otherwise got rid of. They often lie harmless in the gall-bladder for years, but, as a rule, sooner or later set up cholecystitis. The symptoms are generally catarrhal or subacute. The inflammation, once set up, becomes chronic, leading to thickening, contraction, and entire loss of distensibility of the walls of this cavity. This practical obliteration of the gall-bladder is important always to bear in mind; it explains the absence of a tumor from many gall-stone cases, and constitutes a serious difficulty when operation is to be undertaken. Inflammation easily spreads from the gall-bladder to the ducts, and puckers and thickens them in the same way; but when the common bile-duct contains calculi which obstruct it near its entrance into the duodenum, it may become distended to the size of the small intestine. The inflammation very frequently spreads from the biliary apparatus to the peritoneum, and causes adhesion with adjacent structures.

Lloyd states that cholelithiasis is one of the most frequently overlooked disorders, and that scores of its victims go through life and often succumb to their maladies with their disease unrecognized.

The general symptoms of gall-stones are characterized by paroxysmal irregular pains in the abdomen, starting either in the right hypochondriac or epigastric regions, radiating upward to the shoulder-tip or back to the scapular region, often accompanied by nausea and vomiting, and sometimes even by collapse. Fulness is often complained of, with anorexia, depression of spirits, and flesh loss.

We now no longer regard jaundice as an essential symptom (indeed, in the large majority of cases it is conspicuously absent); but, when present, much is to be learned from its careful observation. The finding of gall-stones in the excreta is positive evidence enough, but their absence teaches us nothing; and similarly, too, with regard to the formation of a tumor in the right hypochondrium: its presence gives information of the greatest value, but its absence is of no real clinical significance. Pyrexia is met with when inflammatory processes are present, and, when of the intermittent type, is a phenomenon of

the greatest consequence in localizing the seat of the concretion. Local tenderness is a sign of high value, and too much attention cannot be given to its characteristics. Stabbing pain, elicited by sharp, deep, heavy percussion over the right hypochondrium, is suggestive of calculus.

When the general diagnosis of cholelithiasis has been made, it is necessary, before considering the question of localization, to remember that gall-stones may be met with under six different conditions. These conditions may be divided into two groups: first, those in which the walls of the gall-bladder are yielding and allow of its distention; and, secondly, when the walls are contracted, indurated, and indistensible.

In the first group are placed No. 1, in which the stone lies in the gall-bladder; No. 2, in the cystic duct; and No. 3, in the common bile-duct. In the second group, in No. 4 the stone lies in the shrunken gall-bladder or cystic duct; in No. 5, in the common bile-duct, which, with the hepatic duct, is thickened and dilated, while the gall-bladder and its duct are shrunken and indurated; and in No. 6 the shrunken gall-bladder is packed with stones, and a calculus also is present in the common duct.

The condition indicated in No. 1 gives rise only to attacks of colic. There is usually no tumor, no jaundice, no pyrexia. If, however, a gall-stone passes along the bile-ducts into the duodenum, a slight attack of jaundice may follow next day, and the gall-bladder may become moderately distended.

No. 2 is characterized by colic and the presence of a tumor formed by the distended gall-bladder. There is no jaundice.

No. 3, by the coexistence of colic, tumor, jaundice, and sometimes pyrexia.

It is well to remember that chronic jaundice, accompanied by a distended gall-bladder, is most commonly due to malignant disease of the liver or pancreas, and is not accompanied by the pyrexial phenomena.

No. 4 is the most difficult of all to diagnose. It may be suspected where paroxysms of pain are frequently recurring and where pyrexia and local tenderness are present. There is no tumor and no jaundice.

No. 5 is the most interesting and, in some ways, the most important of the whole group, and its diagnostic recognition we owe entirely to the observations of Osler, of Baltimore. Osler's symptoms are three in number, and there can be no mistaking them: 1, paroxysmal hepatic colic; 2, well-marked ague-like attacks, characterized by chill, sweating, and fever; 3, chronic jaundice of varying intensity, deepening after each paroxysm and fading during the intervals.

No. 6 has symptoms similar to No. 5, and can only be recognized at the time of operation.

As a rule, the pains of hepatic colic shoot upward and backward, whereas those of renal colic shoot downward and forward; that the characters of a distended gall-bladder are a round-ended swelling, which appears under the tip of the ninth right costal cartilage, and enlarges along a line running obliquely downward and inward immediately below the umbilicus. The tumor is "anchored" above, beneath the ribs, and cannot be depressed much by manipulation, although it descends freely on deep inspiration; distention of the colon pushes it upward and forward. Tumors of the right kidney, on the other hand, begin in the loin and enlarge horizontally forward and inward; they are "anchored" towards the middle line, and can be moved vertically through a greater distance by manipulation than by respiration, and they are hidden and pushed out of sight by distention of the colon; and, lastly, it should be remembered that chronic jaundice without distention of the gall-bladder is more likely to be due to gall-stones than to malignant growths.

The operations applicable to No. 1, when a stone lies free in the gall-bladder, are cholecystostomy, cholecystotomy, cholecystectomy, and cholecystenterostomy; of these, cholecystostomy is the proper procedure. The abdomen is opened by a two- or three-inch vertical incision from the costal margin at the outer edge of the rectus muscle, or when a tumor is to be felt, the incision may be made immediately over it. The gall-bladder is exposed, pulled up into the wound, and emptied of its liquid contents by trocar and canula, the puncture opening is enlarged, the edges of the bladder wound held with forceps, and the stone or stones removed with a scoop. The open gall-bladder is then sewed to the fascia covering the rectus or to the muscle itself with a continuous silk suture, a drainage-tube inserted, and the skin wound brought together with two or three interrupted stitches. This operation is usually spoken of as cholecystotomy, and is that most commonly performed, but, strictly speaking, cholecystostomy is its proper title. Cholecystotomy rather should imply the opening of the gall-bladder, and its return into the abdominal cavity with its incision sutured or not, according to circumstances. It is performed in a

similar manner to cholecystostomy, but its death-rate is higher, and it has no real advantages of any kind. Cholecystectomy—excision of the gall-bladder—has been advocated as a preventive of subsequent gall-stone formation, and is not difficult to perform: the calculi are removed as above described, the gall-bladder is separated from its attachment to the liver as far as the cystic duct, tightly encircled with a silk ligature at its neck, and cut away, or, before ligaturing, its peritoneal and muscular coats may be divided transversely at the neck, the mucous membrane only enclosed in the ligature, and the muscular and peritoneal layers sewed over the stump with a continuous Lembert suture. The higher mortality of cholecystectomy should certainly exclude it in the condition we are now considering. Cholecystenterostomy has recently been advocated in this class of cases by Murphy, of Chicago, who has invented an ingenious anastomosis button, which makes the operation easy and rapid. He justifies his proposal chiefly on the ground that cholecystostomy is liable to result in permanent biliary fistula,—a statement entirely opposed to the experience of Tait, Robson, Ferrier, and myself. To anastomose a gall-bladder, emptied of its calculi and whose ducts are clear, with a duodenum is an unwarrantably dangerous and unnecessary measure, although it may be so easily and quickly done with a Murphy button.

When a stone is impacted in the cystic duct, the incision should be made over the situation of the tumor. The same operations are feasible here as in No. 1; but, in addition, cholelithotrity or choledochotomy may be called for. Of all these operations, cholecystostomy is that which should first be tried, and should be supplemented by another procedure only when it has failed. When the abdomen is opened, a stone in the cystic duct may be felt by slipping the finger beneath the liver, along the outer surface of the gall-bladder, and may be most easily squeezed back into the gall-bladder before that cavity is opened. If this cannot be accomplished, the gall-bladder is incised and emptied of its contents, as already described, and an attempt made to lift the impacted calculus out of its nest with a scoop or forceps, working from inside the cavity, aided by fingers working from without. The stone may have to be broken up before it can be dislodged, and this may be done by splitting it with a round, sharp-pointed needle, or by crushing it with suitable forceps from within the gall-bladder. If these measures fail, the needle may be pushed into the stone through the walls of the duct, or the offending calculus may be crushed by means of rubber-padded forceps applied outside the ducts. Any of these procedures are spoken of as cholelithotrity, and should all of them fail, we may leave the stone where it is, complete our cholecystostomy in the usual manner, and take steps to remove the obstruction by daily injections of watery or oily solutions, or we may perform cholecystenterostomy instead; this latter operation is certainly more justifiable here than in the first condition described. There is no necessity, however, to leave an impacted stone behind, for choledochotomy—incision through the duct-walls—is a practicable and tolerably safe procedure. The cystic duct should be incised in its length over the calculus and towards its right side; and the stone removed with a scoop. The opening in the duct may sometimes be closed with a continuous Lembert suture; but, owing to its depth from the surface of the body, the limited space in which to work, and the encroachment of the surrounding structures, this can rarely be satisfactorily accomplished. Fortunately, however, this is a matter of little consequence; but if we cannot suture accurately, we must insert a glass drainage-tube down to the opening in the duct, pack it lightly beneath with iodoform gauze, which is brought out at the lower angle of the external wound and removed in thirty-six or forty-eight hours. The author has dealt with three cases in this manner with most satisfactory results.

The condition figured under No. 3 is less common than those already dealt with, and its operative treatment is practically identical with that of No. 2; cholecystostomy is less likely to succeed here because of the distance of the calculus from the outlet of the gall-bladder, and cholelithotrity and choledochotomy are more difficult because of the depth of the space in which our manipulations have to be carried on. The former of these two latter operations should always be performed, if at all possible.

The treatment of No. 4 introduces us to a condition in which the gall-bladder is so contracted that it cannot be sutured up to the abdominal parietes; the operation of cholecystostomy is, therefore, impracticable; cholecystotomy with suture of the opening, although possible, is usually both difficult and dangerous. Cholecystectomy might be available, and in certain circumstances should be tried. Cholelithotrity, except as supplementary to other operations, need not be considered. Cholecystenterostomy is impracticable by mechanical apparatus, such as Senn's bone-plates and Murphy's but-

tons, because of want of space in the gall-bladder, and to anastomose with simple sutures in this condition is absolutely impracticable. It is by choledochotomy, therefore, or cholecystotomy without suture, that we can most efficiently and safely deal with this class of cases. It is upon free and perfect peritoneal drainage by means of glass tubes and iodoform tampons that we have to rely, and the details of the treatment have already been described when dealing with No. 2. In connection with this and the remaining two varieties, it may be desirable also to drain the right lumbar peritoneal pouch by means of a tube through the abdominal wall in the lumbar region, just below the lower end of the right kidney. The reporter has adopted this plan in a recent successful case, with great advantage.

Finally, we consider the operative treatment of Nos. 5 and 6, to which two only (cholelithotrity and choledochotomy) of the half-dozen gall-stone operations are at all applicable. Lloyd has tried both methods, but is inclined to favor the major and more radical procedure of choledochotomy. In making the incision into the duct which runs along the free side of the gastro-hepatic omentum, it is well to remember that in the omentum lies also the hepatic artery, and to the left and behind is the portal vein. The incision, therefore, must be made upon the calculus, vertically and to the right. An opening at so great a depth cannot be satisfactorily sutured. It is waste of labor to attempt it. Give part of the time which would be frittered away in useless suturing to the cleansing of the peritoneum, the careful arranging of the drainage-tube and its circumjacent iodoform packing. He has absolute faith in tamponing of abdominal wounds with iodoform gauze, in its good drainage, efficiency, and harmlessness to the peritoneum. In No. 6 separate incisions would have to be made into the contracted gall-bladder and the common duct, and two drainage-tubes might possibly be required.

Mr. Rutherford Morrison, of Newcastle-on-Tyne, has recently called attention to the advantages offered by transverse incision through the abdominal parietes, affording, as it does, easier access to the structures beneath the liver, and permitting of efficient tube-drainage from the outer angle of the wound. He disapproves of suturing the gall-bladder to the abdominal wall, because of its liability to be followed by permanent fistula; but in this matter Lloyd thinks he is wrong. He has adopted the transverse incision several times lately, and can speak well of it.

ABORTIVE TREATMENT OF SYPHILIS.

LARRIEU (*Revue de Thérapeutique Médico-Chirurgicale*, 62 année) states that under the treatment he describes he has never seen secondary symptoms follow a chancre. First, superficial cauterization of the chancre is practised by means of Vienna paste. Second, rubbing the mercurial ointment into the groins. Third, the taking, for thirty-five days, of 3 to 5 drops of tincture of iodine every morning.

CYSTALGIA.

BLEYNIE (*Limousin Méd.*, 1895, p. 6; quoted from *Revue de Thérapeutique Médico-Chirurgicale*, 62 année) had under his charge two cases of cystalgia. On both he practised wide dilatation of the bladder-neck. Cure was accomplished. In one case there was incontinence of urine for fifteen days.

SERUM TREATMENT OF SYPHILIS.

ISTOMANOV (*Ann. Derm.*, January, 1895; quoted from *Revue de Thérapeutique Médico-Chirurgicale*, 62 année) practised serum therapy upon several syphilitics. In thirteen secondary manifestations disappeared in the course of treatment; in one the treatment was devoid of results. 2 to 6 centigrammes were injected each day. Fifteen injections at most were given.

TREATMENT OF FOREIGN BODIES IN THE URETHRA.

GUYON (*Annales Genito-Urin.*, 1895, p. 97; quoted by *Revue de Thérapeutique*, 62 année) classifies foreign bodies in the urethra as hard or soft. Hard bodies are detected by the bulbous bougie. They are mostly found at the peno-scrotal angle. Soft bodies are detected by the endoscope, and may be extracted through this instrument by means of a long pair of forceps. When large, hard bodies, such as impacted stones, cannot be thus removed, the urethral forceps are conducted down to the seat of lodgement, and an effort is made to seize the body, guided only by the sense of touch. When the foreign body is lodged in the posterior urethra, it should be pushed back into the bladder, where it may be crushed and the fragments evacuated. When stricture prevents extraction, dilatation may be accomplished by a permanent catheter in place of performing internal urethrotomy. Exceptionally external urethrotomy is required. Foreign bodies in the bladder are recognized by palpation of the

bladder, by the bladder-searcher, by a lithotrite, or a cystoscope. When mobile, they are usually found in the neck. When the foreign bodies are soft and not encrusted, a lithotrite with flat blades serves an excellent purpose in withdrawing them. Very little liquid should be injected into the bladder in preparing for the withdrawal of these bodies. If the catheter is in the bladder and is friable, it may be broken and washed out. If the foreign bodies are hard, either an effort may be made to withdraw them by special apparatus or hypogastric cystotomy may be performed. Hair-pins are readily removed from the female bladder by introducing a blunt hook into the curvature of the pin. This may be done by the aid of a cystoscope. Brittle bodies are, of course, subject to lithotrity. Metal and wood are to be removed by section.

THE BLOODLESS REDUCTION OF CONGENITAL HIP-JOINT DISLOCATIONS.

MIKULICZ (*Archiv für Klin. Chir.*, Berlin, Bd. xl., ii.) recommends the procedure of Paci, Schede, and himself, as opposed to the operative interference of Hoffa and Lorenz. He believes the open method of reduction will soon be entirely replaced by the safer and more certain method he advocates. Recurrence of the deformity he thinks is due to,—

1. Shortening of muscles.

2. An atrophied capsule and a narrow cartilaginous rim.

3. Disproportion between the head of the femur and the glenoid cavity.

4. Possibly hypertrophy, but more likely atrophy of the ligamentum teres.

To overcome these obstacles to permanent reduction he employs a fixation apparatus, placing the head of the bone in the best possible relation to the socket, and holding it there a sufficient time for the formation of the cavity about the head of the bone and for the proper adjustment of ligaments and muscles.

Schede proposed weight extension overnight, followed next day by an apparatus, worn for a year, which kept the legs abducted and at the same time, by direct pressure upon the trochanters, held the head pressed against the socket.

Paci, by forced abduction, rotation, and flexion, replaced the bones in normal relation, maintained them in this position by an apparatus or fixation bandage for four months, after which patients were allowed to be up, with an apparatus restricting the motions.

The author seeks to replace the head of the bone against the acetabulum and maintain it in this position.

ABSORPTION OF MEDICINES PER VAGINAM.

COEN and LEVI (*Collegione Ital di Litture Sulla Med.*, serie vii., No. 2) experimented upon pregnant women, upon those in the puerperal state, those convalescing from hysterectomies, also those afflicted with fever and diseases of the genitals.

Potassium iodide was easily absorbed. In one hour after the insertion of a tampon saturated with a twenty-per-cent. solution the urine contained iodine, the maximum of elimination being twenty-four hours after application, and in forty-eight hours no trace of iodine is found. In the fever patients the absorption was very rapid, while in the hysterectomies it was not altered.

Iodoform is absorbed in small quantities, commencing seven hours after application and lasting twenty-four hours. To secure rapid absorption the vagina should be insufflated with fresh iodoform, which should be allowed to remain several days.

Salicylic acid is rapidly absorbed in large quantities, appearing in the urine in one hour and disappearing in twenty-four hours.

Salol is also rapidly absorbed, and remains for a long time traceable in the urine.

Antipyrin also is rapidly absorbed, appearing in the urine one and a half hours later, and remains for forty-eight hours, but the antipyretic power is less than when administered by the mouth.

The conclusions reached are, in general, that the vagina undoubtedly has absorptive powers, and that these powers are increased in pregnancy in the puerperal state and in the fevers. —*Centralblatt für Gyn.*, December 8, 1894.

THE THERAPY OF SYPHILIS.

NEUMANN (*Medicinisch-Chirurgische Centralblatt*, Wien, March 1, 1895) concludes his article upon the treatment of syphilis with a *résumé* of the "expectant method," as formerly practised, and the principles of the modern treatment.

It was formerly held that the use of local applications—as disinfectants, astringents, and caustics, with sarsaparilla, sassafras, and quinine, a careful supervision of the diet and the habits of the patient—were less often followed

by sequelæ, and, when they did occur, these were less obstinate than when the mercurial treatment was employed.

When a patient has been treated by the expectant method and no symptoms have appeared for one year after the disappearance of the eruption, he is to be considered cured of his syphilis. The duration of this treatment usually lasted from four to twelve months, or longer if there remained a trace of the eruption or sclerosis.

Questioning the results of the expectant treatment, we find, after the lapse of time, maybe twelve to fourteen years, as in those cases where no treatment whatever was employed, sudden swellings of the lymph-glands, ulcerations, or other manifestations of syphilis; or, if the patient marries, the first child shows unmistakable marks of the disease.

This plan, however, was not without some influence in the better treatment of syphilis; from it men learned the value of cleanliness and to be cautious in the duration and dosage of the mercurial treatment.

In the medication it must be remembered that a systematic plan must be adhered to. It is not the size of the dose, but the regular administration of it which is most beneficial. At the same time, the poorly nourished condition of the patient, due to the virus or the destructive tendency of large doses of mercury, as well as associated constitutional troubles, must be borne in mind to secure the long-continued treatment essential in the cure of this malady.

To lessen the foci of infection, not only to the patient himself, but also to others, the mucous membranes of the mouth, nose, fauces, and genitals should be carefully inspected and treated, and all excesses in wines and venery avoided. Good food, proper habitations, warm clothing, especially in winter, to avoid the predisposing inflammatory troubles, and the use of warm and iodine baths to the skin to hasten the absorption and affect the excretory organs, should all be ordered.

Undoubtedly the best and most energetic method is the inunction cure, for by this method the medicine enters the blood by the shortest channels. It is indicated in every case where important organs, as the nervous system, eye, larynx, etc., are affected, or where the quickest possible effect of the mercury is desired, as where parts of the body are affected which are visible. It is contraindicated in skin ulceration, or where, after a few inunctions, an eczematous or pustular eruption follows.

In those cases of skin ulceration where inunctions are contraindicated, sublimate baths find their chief indication. Internal medication presupposes the sound condition of the organs, and is used in all cases where the progress of the disease is not so swift as to cause irreparable damage before the disease can be brought under control.

In children it can be combined with the above-mentioned sublimate baths. Chronic lung-disease, intestinal and kidney affections, grave anæmia, and chlorosis forbid the use of mercury, and in these conditions iodine is called for. This drug may be employed externally by painting, subcutaneously as iodoform injections, and chiefly internally as the iodides of potassium or sodium.

In secondary manifestations it is useful to allay pain in periosteum and bones, or as an astringent to the mucous membranes.

Its greatest usefulness is found in the tertiary manifestations in gummas in any situation, but the treatment must be continued long after the disappearance of the disease, to avoid sequelæ.

DRAINAGE OF DOUGLAS'S CUL-DE-SAC.

BOISLEUX raises the question (*Centralblatt für Gynäkologie*, December 15, 1894) why drainage is no longer used. The use of antiseptics has fulfilled the prophecy of gynæcologists that drainage would no longer be necessary. To this extent—where simple operations without complications, as sterile cysts, extrauterine pregnancies, etc.—it is not so necessary. But the author thinks drainage is necessary in cases of purulent ovaritis, salpingitis, or pelvic abscess in any situation,—*i.e.*, wherever there are germs,—and that drainage must not be discarded for the less certain method of Spencer-Wells, in which the purulent collection in Douglas's pouch is emptied by puncture.

However, at the last Gynæcological Congress at Breslau most of the operators were against drainage, Frommel, Schauta, Sänger, and a few others being in favor of it.

Schauta decides during the operation whether he drains or not, depending upon the microscopic discovery of pus in the adnexa. If bacteria are present, then drainage. If bacteria are not present, close without the tubes. But the objection to this is the difficulty of deciding the presence or absence of pus microbes. Often the operator has no microscope. Again, in the pus it is not always possible to determine the presence of bacteria, while you cannot wait for cultures from the abscess wall to

develop and determine the existence or non-existence of septic germs. Consequently each case must be treated as though sepsis was present.

How long shall drainage be pursued? The results of Morax and Hartmann show that in salpingitis containing sterile pus, or containing only gonccocci, the tubes or drainage should by taken out thirty-six to forty-eight hours after the operation. In salpingitis containing streptococci or any other form of pyogenic microbe, the drain must be left much longer.

To prevent stopping of the tubes by blood-clots or other means, a piece of iodoform gauze is drawn through the tube and removed at the first dressing, insuring continuous drainage. Ordinary capillary drainage, as suggested by Mikulicz, is dangerous, Boisleux having tried it in fifteen cases with only one good result. The double drain proposed by Péan, fixed by suturing to the uterus, is very efficient, but often occupies too much space.

In hysterectomies, with or without pelvic abscesses, the through-and-through drainage of Chopert will be found of great value, the tube passing from the abdominal opening out through the vagina, and admits of irrigation with antiseptics.

In sixty cases treated by the self-retaining drainage-tube, for all manner of purulent pelvic affections, all were quickly and satisfactorily healed, most of them leaving the bed on or before the tenth day.

The technique of the application of the "cross" drainage-tube and the after-treatment may be thus summarized:

The tube is placed in iodoform ether; then a strip of gauze about one-fourth its calibre is drawn through it and held in place by silk-worm or catgut. A T-bandage soaked in a two-and-a-half-per-cent. solution of carbolic acid is placed over the vulva.

The first day after the operation the strip of gauze is removed from the inside of the tube.

Second Day.—Vaginal toilet and T-bandage renewed.

Third Day.—Vaginal toilet; intraperitoneal injection of .5-per-cent. carbolic solution, and iodoform packing of the vagina.

On the following eight days the vaginal packing is prepared by dipping the carbolized gauze in

Olive oil, ʒiii;
Creosote, gr. xxxvii;
Menthol, gr. lxxv,

and packing the same back against the wound through the vagina.

In all these manipulations the vagina is previously anointed with borated vaseline (five per cent.) to lessen the irritation.

The method of drainage should continue four to five days, one day longer when there is pus.

TREATMENT OF ARTIFICIAL ANUS AND FÆCAL FISTULA.

In the *Archiv. Gén. de Méd.*, CHOPUT gives the following treatment, based upon thirty-five personal observations:

He designates intestinal fistulæ with a decided spur, "artificial ani;" those without spurs, as "fæcal fistulæ." If the spur is long and reaches to the level of the skin surface, the enterotome may be inserted for six to eight centimetres, while in cases of short and deeper-seated spurs three centimetres are sufficient.

Richelot's method of splitting the spur and suturing is easy in long, thin spurs, while in the short and thick varieties the interposition of a coil or of the mesentery makes a disagreeable complication.

To avoid the troublesome bleeding which sometimes follows the splitting of the spur, the author employs long slender forceps, which are left for the efforts of nature to remove them.

In fæcal fistulæ the intestine is freed from the abdominal wall until two rows of sutures can be employed.

If the intestinal opening is large, the edges are to be freshened and the opening closed by sutures.

Where both ends of the intestine approach the skin, the intestine is separated from the skin for two centimetres and the mucous membrane is stripped away for half that distance, the two muscular coats are sutured on their inner surface, and the opening drained by iodoform gauze; this is the "suture par abrasion." In thirteen cases thus handled, nine cures resulted.

Another method, termed by the author "enterorrhaphie longitudinale sans resection," is known to us as lateral anastomosis without section of the gut, and is recommended where there is decided narrowing of the intestinal calibre, or in femoral fæcal fistulæ.

If ordinary lateral anastomosis is practised, the part of the intestine left attached to the abdominal wall may or may not be removed by dissection, depending upon the amount of mucus secreted, and, as atrophy usually follows, is not always necessary.—*Centralblatt für Chir.*, December 8, 1894.

A NEW TAR PREPARATION.

Under the title "Liquor Anthracis Simplex," FISCHEL (*Archiv für Dermatologie und Syphilis*, xxx., Bd. i., 1895) offers a remedy similar to the English "liquor carbonis detergens," and from the "simplex" he derives a second formula, which he calls "liquor anthracis compositus." The latter is prepared in the following manner:

1. Three ounces of coal-tar are dissolved in six ounces of benzol, to which six ounces of ninety-per-cent. alcohol are added; the whole is well shaken, and set aside at a temperature of 35° C.

2. Twelve and a half drachms of potassium sulphate are dissolved in ten drachms of hot sodium hydrate (fifteen per cent.), and warmed, together with six ounces of alcohol.

3. Three ounces of resorcin and five drachms of salicylic acid are dissolved in six ounces of alcohol, and with solution No. 2 is added to solution No. 1; all well shaken together and set aside. Finally, a few drops of olei ricini and ethereal oil are added to make it more readily spread upon the skin and to deodorize it.

It is of prime importance that the sulphate of potassium should be freshly prepared, for in the use of an old preparation the author met with frequent dermatitis following its application.

The liquor anthrax simplex is made in exactly the same manner, leaving out the resorcin, salicylic acid, and the sulphate of potassium.

The remedy is spread upon the skin by means of a camel's-hair brush, and the surface need not be limited, for, in the author's experience, he has never met with a single case of intoxication from its use.

It is adapted, in general, for all itching and scaly skin-diseases; contraindicated in acute inflammations and moist affections.

It is especially indicated in pityriasis versicolor, in which disease it acts as a specific; also beneficial in chronic eczema and herpes tonsurans.

In psoriasis it stands next to chrysarobin in efficiency, and has been successful in lichen rubrum planus and pruritus ani.

The plan usually pursued in pityriasis is to cover the surface thoroughly with the liquor anthracis compositus; wait five to eight days; then wash with warm soapsuds. If the affection has not disappeared, the application is again made, while in the interval the surface is powdered with zinc oxide.

For herpes tonsurans the surface is painted twice, with a three days' interpause. After the second application, three days are allowed to intervene, when soapsuds are again used to cleanse the surface, and a zinc paste applied for twenty-four hours, after which it is powdered as above, and if, at the end of a week, the disease is still manifest, the treatment is recommenced.

NEPHRITIS FOLLOWING THE USE OF MERCURIAL INUNCTIONS IN THE TREATMENT OF SYPHILIS.

At the meeting of the Dermatological Society of Berlin, December 4, 1894, SAALFELD (*Monatshefte für Praktische Dermatologie*, Bd. xx., No. 2) presented a case of nephritis following the use of, or aggravated by, the inunction of mercury in a case of syphilis. When the patient was first seen her urine contained 8 per 1000 albumin. After taking five inunctions of 45 grains each, the albumin had increased to 60 per 1000 urine.

In the discussion which followed, HELLER reported two hundred cases of syphilis treated by the hypodermic injection of sublimate without a single case of nephritis, and LEWIN said that had been his own experience, while he had seen nephritis occur in several cases after a few inunctions.

MANKIEWITZ had observed nephritis after the use of a mouth-wash of potassium chlorate, which Lewin believes is always "hemorrhagic," while the variety following inunctions, in his experience, was always albuminuric.

CARBOLIZED GLYCERIN AND MENTHOL IN OTITIS.

At the Vienna Congress, SZEUES presented his views upon the use of carbolized glycerin and of menthol in affections of the ear (*Annales des Mal. de l' Oreille, du Larynx*, etc., January, 1895), confirming the good results obtained by others. Carbolized glycerin (ten to twenty per cent.), well heated, is dropped into the canal in cases of acute otitis where there is no perforation of the membrane; also a ten- to fifteen-per-cent. solution of menthol in oil was employed with good results in one hundred and fifty cases. A small strip of gauze impregnated with this oil is placed in the canal and left *in situ* for twenty-four hours, at first causing a slight burning, which, in some cases, may persist for a few hours. This procedure is not always proof against sequelæ.

SKIN ABSORPTION OF SALICYLIC ACID.

BOURGET recommends (*Therapeutische Monatshefte*, November, 1893) the following ointment in ordinary and gonorrhœal rheumatism:

Acid salicylic,
Lanolin,
Olei terebinth., of each, ℥iiss;
Adipis, ℥iii.

The salicylate is quickly absorbed, and can be found in the urine in large quantities. The pain rapidly lessens, and a quick recovery usually ensues.—*Centralblatt für Chirurgie*, December 15, 1894.

THE ANTITOXIN TREATMENT OF TETANUS.

HEWLETT (*Practitioner*, vol. liv., No. 4) states that in 1893 there were one hundred and forty-five deaths from tetanus in England and Wales, the combined statistics giving a mortality of ninety per cent. The prognosis is worse if the injury be a severe one, if the wound be lacerated or contused, or especially if contaminated with earth. Foot-ball injuries are stated to be especially liable to be followed by tetanus. On experimental grounds the modern antitoxin is most promising. An animal, preferably a horse, is injected with the germ-free tetanus toxins in gradually increasing doses, until in two or three months it becomes immune; the blood-serum acquires antitoxic properties, and will entirely counteract the effects of the tetanus poisons. This means that one cubic centimetre of the serum will protect one million grammes of guinea-pig, or two thousand guinea-pigs, each weighing five hundred grammes, from a minimal fatal dose of tetanus toxin injected eight to twelve hours afterwards.

It is the blood-serum of the artificially immunized animal which is termed the tetanus antitoxin. In practice it is met with in at least three forms: (1) the blood-serum as such is sometimes used; (2) for convenience of keeping, the blood-serum may be evaporated to dryness *in vacuo* over sulphuric acid,—one gramme of the dry substance corresponds to ten cubic centimetres of the fluid serum; (3) the serum may be precipitated with alcohol and the precipitate dried (Tizzoni's antitoxin). This is, perhaps, the most concentrated form. The dose has varied enormously; the smallest recorded dose is about 2 drachms, the largest about 1½ ounces. Of the fluid serum, which should have an immunizing power of at least one million, 5 to 10 drachms should be given at the first dose, followed by 1 to 2 drachms afterwards. Of the dried serum, ½ to 1 drachm should be given with the first dose, followed by doses of 15 to 30 grains; while Tizzoni recommends about ½ gramme of his antitoxin for the first dose, followed by .6 gramme (between 9 and 10 grains) for each subsequent dose. The amount and frequency of the injections of antitoxin are to be based on the urgency and subsequent amelioration or otherwise of the symptoms, it being borne in mind that when the incubation period is very short, the larger and more frequent doses should be given, even though the case appears at first to be a mild one. The serum is harmless and gives rise to no ill effects. In children the injection may be somewhat diminished in amount, but certainly not below half that for adults.

The serum must be administered entirely by subcutaneous injections. The syringe should be a large one, with a capacity of at least ten cubic centimetres, an ordinary-sized hypodermic syringe necessitating multiple punctures; suitable forms are now supplied by most of the wholesale druggists. Before using the syringe, it should be taken to pieces and boiled in water for ten minutes to sterilize it. The needle may be flamed in a spirit or Bunsen flame with a like object; and the skin to be punctured should be disinfected with 1 to 20 carbolic lotion, the greatest care being taken to prevent septic infection. If the fluid serum be employed, the requisite amount should be poured out into a measure previously rinsed with boiling water to sterilize it, and the vial quickly corked again and kept in a cool, dark place, preferably on ice; and if, after being opened once or twice, it becomes cloudy from the presence of bacteria, it must be discarded. The dried serum and Tizzoni's antitoxin must be finely powdered, the dose weighed out, and dissolved in five or ten parts, according to convenience, of distilled water, which has been sterilized by boiling for ten minutes. If reduced to an impalpable powder, the dried serum dissolves readily in water. As heat is fatal to the antitoxin, no warmth must be employed to hasten solution, and syringes, vessels, etc., ought to be allowed to cool after sterilization before using. The antitoxin is injected subcutaneously into loose cellular tissue, as in the back between the scapulæ, or in the abdomen. Provided strict aseptic and antiseptic precautions have been taken, no trouble will result from the puncture, and no disturbance ever ensues from the antitoxin, with the exception of some urticaria.

For the antitoxin to have a fair chance, it ought to be administered as soon as the onset of tetanus is probable. Any distinct sign, such as stiffness of the neck, difficulty in opening the mouth, or even considerable pain at the seat of injury, or radiating from it, coming on a few days after the accident without apparent cause, should at once lead us to employ this remedy. Hitherto its cost has been almost prohibitive, but now it can be obtained at a much more reasonable rate.

Behring and others have shown that the amount of antitoxin necessary for cure increases very rapidly with the duration of the disease; so that, if a favorable result is to be expected, it is imperative to employ the remedy as early as possible.

The wonderful power exerted by the antitoxin in rendering the animal proof against tetanus raises the question as to whether it might not be wise in some instances to use it before the disease declares itself. For example, a person sustains a lacerated wound which is freely soiled with earth; it is untreated and suppurates, and he comes under observation only when matters have gone from bad to worse. Here the onset of tetanus might not be unlikely later on, and a small injection of antitoxin, judging by the results of experiment, would render this impossible. The amount sufficient to immunize is much smaller than is required to cure, and probably an injection of 5 cubic centimetres of serum would be enough for this purpose.

The only effect, if any, which follows the injection of the antitoxin is a favorable one. It is stated that the antitoxin diminishes the duration of the disease, that it reduces the temperature when this is raised, that the pulse-frequency falls, which is always a good sign, and that the attacks of spasms become rarer and weaker. When it fails to cure, it may markedly relieve many of the distressing symptoms.

Cure has undoubtedly occurred in cases of tetanus treated with antitoxin, but whether due to this remedy or not is a difficult question to decide. The writer has collected the details of fifty cases treated with antitoxin. Only sixteen deaths occurred, which gives a mortality of thirty-two per cent. One of the cases was an idiopathic one, and ended in recovery; another was a case of tetanus neonatorum, and ended fatally. The remaining forty-eight cases were all traumatic, though in two or three instances the incubation period was abnormally long. The details of five of these cases are incomplete. Of the remainder (forty-three), twenty-four had an incubation period of eleven days or under, with nine deaths; while nineteen had an incubation period of more than eleven days, with three deaths. If these figures can be relied on, it would seem that the antitoxin treatment has considerably lessened the mortality in tetanus; but the tendency is to report successful cases and not unsuccessful ones, which may render statistics unreliable. As a slight set-off, however, it is to be noted that two of the fatal cases were practically moribund when the treatment was commenced.

The antitoxin treatment of tetanus is not likely to be as successful as the corresponding treatment of diphtheria is stated to be, for tetanus only declares itself when the toxins have entered the general circulation, while diphtheria probably may be diagnosed before much of the poison has been absorbed. If, however, the antitoxin treatment will reduce the mortality in tetanus by only one-half, a great victory will have been gained by bacteriological research.

Local treatment of the wound, if there be one, must on no account be omitted, for it is here that the poisonous substances which produce the disease are elaborated. The affected part should be treated by the use of strong antiseptics, followed by free excision. Tizzoni and Cattani have shown that nitrate of silver, in one-per-cent. solution, is perhaps the most potent germicide for the tetanus bacillus. It is questionable whether compensating good results are to be expected from so severe a measure as amputation, provided the injured part can be freely excised; it is only when circumstances prevent this that amputation should be resorted to. It has been shown experimentally that iodine has a powerful effect in weakening the toxins, and it might be worth while to swab out the wound before excision with an iodine solution, such as 1 part of iodine and 1 part of potassium iodide dissolved in 100 to 200 parts of water.

As is usually recommended, the patient ought to be placed in a darkened room, and silence and quietude must be rigorously enforced. Abundance of nutritious and easily digestible fluid food should be administered; and if deglutition brings on an attack of spasms, the patient may be fed two or three times a day by means of the stomach-tube while under the influence of chloroform. If the act of injecting the antitoxin produces spasms, it should also be performed under chloroform anæsthesia. To induce sleep, chloral is valuable and may be given freely, and will generally be found preferable to opium.

THE TREATMENT OF FRACTURES.

BUNTS (*Medical News*, March 30, 1895), after an instructive paper on the treatment of fractures, terminates his paper as follows:

The indications for the treatment of fractures are positive and fixed.

All fractures should be adjusted at the earliest possible moment consistent with the obtaining of proper appliances or assistance.

We should not wait for inflammation to subside before placing the fracture in some kind of a retention apparatus or splint.

Chloroform should be administered more frequently to facilitate diagnosis and adjustment.

When properly reduced there is comparatively slight tendency to redisplacement.

Simple splints are to be preferred to moulded ones.

Use that splint that best fulfils the indication, regardless of preconceived ideas.

Non-permanent are ordinarily to be preferred to permanent dressings.

Dressings should be opened up and fractures examined not later than the second day.

Rest and elevation are the best means of combating inflammation.

Cold is not contraindicated in robust patients, particularly if the fracture extends into a joint.

Pain is best relieved by revision of the dressings. Early passive motion and frequent massage are the best means of restoring function.

INDICATIONS FOR SURGICAL INTERFERENCE IN CASES OF APPENDICITIS.

STEELE (*North American Practitioner*; quoted from *Matthews's Medical Quarterly*, April, 1895) reaches the following conclusions:

A differential diagnosis between appendicitis and typhlitis, perityphlitis, and paratyphlitis cannot be made with absolute certainty, but we remember that ninety-one per cent. of these cases are appendicitis. From fæcal impaction we differentiate by rectal examination, by colonic flushing, and by the administration of salines, aided also by the history and character of the pain present. From tubercular or malignant tumors, by the history. From ovarian or tubal disease, by the history and a careful examination, if necessary, under an anæsthetic. From extra-uterine pregnancy in the same way. From hæmatocele or intra-abdominal hemorrhage by the history and pallor, shock, and varying line of dulness, with absence of temperature, and rapidity and feebleness of pulse.

(*a*) In operating for acute perforating appendicitis, make your incision three to four inches long at the outer border of the right rectus, or an oblique cut in the same location over the centre of cæcum.

(*b*) Make median incision where there is general septic peritonitis from intra-abdominal abscess or ruptured abscess, flush the cavity, and drain with strips of iodoform gauze, or tubular drain to bottom of abscess, or, better, through the right loin.

(*c*) Incise over the most prominent point of tumor where there is encapsulated pus or fluctuation, wash out with sterilized water, remove fæcal concretion if it can be felt with the finger, pay no attention to the appendix, as the perforation has already closed, and it lies buried in a mass of plastic but infective exudate, pack the abscess cavity with iodoform gauze, and redress daily.

(*d*) Drain with gauze, glass, or rubber, after repeated flushing with warm sterilized water; if the abscess extends behind the cæcum or upward towards the liver, through-and-through tubular drainage *via* the loins gives best results.

(*e*) Close upper and lower angles of the wound by sutures.

(*f*) If perforation of cæcum or bowel and subsequent fæcal extravasation occurs, invert the edges of the perforation and close with fine continuous silk sutures inserted through the serous and muscular coats only; if the ulceration has rendered the tissues too soft and friable to hold a stitch, touch the edges of the perforation with tincture of iodine and tampon with iodoform and iodoform gauze, drawing the edges of the wound together with rubber adhesive straps, over which a tight bandage of flannel should be applied, and the patient given 5-grain doses of salol every four hours, and kept on a milk or milk-porridge diet to lessen intraintestinal gaseous distention.

Steele's ideas in regard to the indications for operation in appendicitis may be summarized as follows:

In cases where there is persistent pain, tenderness, temperature, increasing pulse, increasing tumor, and progression of the disease.

In all cases where pus is present.

In all cases where salines and flushing of the colon does not give prompt relief.

In recurrent or relapsing cases in the interval following an attack.

Whenever the appendix is found diseased.

Whenever the appendix is found diseased during a laparotomy for any other condition, it should be removed at the same time.

Operate immediately in all perforative cases.

Operate in all gangrenous cases.

Operate early, and thus lower the mortality, which is less than eight per cent. during the first week and over seventeen per cent. during the second week in cases operated.

PRELIMINARY SUTURING OF THE INTESTINAL OPENING AS A PROPHYLACTIC MEASURE AGAINST INFECTION DURING THE OPERATION FOR ARTIFICIAL ANUS.

SENN (*Matthews's Medical Quarterly*, April, 1895) states that there can be little doubt that the operative treatment of intestinal fistula or artificial anus requiring opening of the abdominal cavity has been attended by an alarming mortality, owing to infection caused by the escape of fæces through the intestinal opening. Packing the opening with gauze or cotton is a very inefficient way in which to prevent fæcal extravasation. The use of clamps and ligatures on each side of the opening in the bowel is equally unreliable. It appears that the only safeguard against this source of danger is preliminary closure of the intestinal opening by suturing, placing the sutures so close together as to absolutely prevent the escape of any of the intestinal contents. After this has been done, the field of operation is once more thoroughly sterilized before the abdomen is opened and the intestine detached.

The sutures should include all of the tunics of the bowel. With few exceptions, this row of sutures will remain as Czerny sutures, to be buried after the bowel has been detached by Lembert stitches.

The flexion of the bowel is the most important factor in producing the spur, and the measures which are calculated to correct the flexion will prove useful in removing the spur. In artificial anus, produced accidentally or intentionally, the flexion is caused by the prolapse of the intestinal loop into, and sometimes even beyond, the opening in the abdominal wall.

If the intestine is detached, the flexion is diminished or completely corrected, and its recurrence is prevented by transverse suturing of the intestinal opening. A study of Senn's cases has convinced him that the provisional closing of the intestinal opening by transverse suturing before using the knife is the most efficient prophylactic measure against infection, and that resection of the intestine for fistula and artificial anus can be avoided in the majority of cases, and that in its place transverse suturing and correction of the flexion will yield better results.

THE PARENCHYMATOUS RUPTURE TREATMENT.

LINDMORE and ARNOLD (*Atlanta Medical and Surgical Journal;* quoted by *Matthews's Medical Quarterly*, April, 1895) state that the fate which this treatment has met shows again that a practice which is based upon a crooked theory does not secure good results. If the leading thought of a technical procedure is not vested in anatomy and physiology, it cannot become a working theory; it has no foundation in reality, and if it be ever a success, it is a mere casualty, depending on fortuitous circumstances, the nature of which is unknown and can methodically, therefore, not be taken advantage of.

The first case on which the author operated was an aged individual with a severe scrotal hernia of long standing. As a rule, there was an easy reduction; but repeatedly strangulation had threatened, and when the writers saw the case the trouble had wrought secondary symptoms which rendered a remedial interference peremptory.

The injections were made at random. Since there was no fixed theory, the operator was at sea about whether the medicine would work better by being thrown in the midst of the ring or into the pillars of the same. But the lack of theory was no impediment to success. After one and a half or two dozen injections the breach was closed up. The invalid laid aside his truss, stood and walked more erect, and was complimented on having added a half-score years to his life, if no more.

The cure remained by no means unique. But then cases which were not a tenth part so bad proved rebellious, and up to date it remains to the authors a sort of mystery why the most desperate of the cases got well so soon, while others, with nearly the same or a more careful treatment, even, were left out, and had to be abandoned as incurable.

The remedy used was made up of tincture of arnica, sulphate of zinc, alcohol, and water. This mixture probably possesses no inherent virtues, but acts simply as an irritant. In the text-books and in journal articles describing the results of this treatment the prescription has varied greatly. The use of alcohol alone is advised, injecting not more than 10 to 12

minims at most. Some pain and smarting result, but are soon relieved.

A danger against which those who want to try the treatment must be warned is dependent on throwing the medicine, not into the outer or the inner ring, according to whether the case is direct or indirect, but between the two layers of the superficial fascia. Probably, in consequence of the profusion of lymphatics which are found here, the medicine is liable to cause lymphadenitis, which tends to discredit the treatment. The strength of the alcohol used is about seventy per cent.

METHOD OF DEALING WITH VERY LARGE CALCULI IN THE BLADDER.

JENNINGS (*Indian Medical Gazette*, April, 1895) thus proposes to remove very large stones; such, for instance, as are greater than three inches in their shortest diameter. The suprapubic incision cannot be longer than three and a half inches. If the stone is too large to come through this, it must be broken in the bladder. Jennings thus breaks it. The instruments required are a small, sharp-pointed piece of steel about ten inches long, a leaden hammer, a piece of stout cloth about ten inches square, across which, from corner to corner, a piece of tape has been sewed, and attached to one of the corners a piece of string twenty-four inches long, and a metal catheter.

To prepare the cloth, open it out on a table, lay the string across to the opposite corner and commence to roll the cloth from the corner to which the string is attached until it reaches the left- and right-hand corners. If rolled according to the above it will leave the cloth in a triangular shape. Now pass the end of the string along the catheter, place the end of the catheter in the centre of the roll and press down, take the left-hand corner and bring it up to the catheter, take the right-hand corner and do likewise, and repeat with the third corner. The catheter will now be enclosed in the cloth. Pass the end of the catheter with cloth into the bladder above the stone until the end touches the posterior wall of the bladder; give the ends of the cloth outside the bladder to an assistant to hold, and pass the end of the catheter round the stone, either right or left, until the point comes to the same place in which it was when above the stone. With a few tries the stone is pushed over the roll of cloth.

Now withdraw the catheter and string together; in so doing the part of cloth which was rolled up becomes opened and is drawn out through the wound.

Get your four corners even; the stone will now be inside the cloth in the centre.

Pass the four corners through a ring of one and half inches diameter and open the cloth; this will expose the stone.

An assistant now takes two corners in each hand and draws the stone upward until it touches the abdomen.

Pass the sharp-pointed instrument through the opening down to the stone, and with the leaden hammer strike it a few light blows. After having done this, strike heavier blows; the stone will be broken, small pieces can be removed with forceps, and larger pieces again treated in the same way until the whole is removed, when the cloth is withdrawn. To save time, if a lithotrite is at hand, it could be used to crush the large pieces.

THE TREATMENT OF COLLES'S FRACTURE.

JACOBSON (*New York Medical Journal*, April 6, 1895), in an article upon the above subject, states that it is evident, upon simply viewing a Colles's fracture, that the deformity is not limited to the radial side of the forearm. Inspecting either the anterior or posterior surface of the wrist, it is at once apparent that there is as much, if not more, abnormity on the ulnar as on the radial side.

Experimental study has shown that the position of the ulna is so changed in this "fracture" that it is proper to describe the pathological condition as one of dislocation of the lower end of the ulna associated with fracture of the radius. Dr. Moore found the internal lateral ligament stripped from its styloid attachment and the triangular fibro-cartilage torn off. The ulna, freed from its ligamentous restraint, became entangled in the deep fascia known as the annular ligament. To this entanglement rather than the radial fracture he attributed the deformity produced. Dr. Moore also found that the tendon of the extensor carpi ulnaris—which, passing through the annular ligament, is placed normally between the head of the bone and its styloid process—was thrown out of place in such a manner as to favor this entanglement of the ulna in the annular ligament and secure it in this position. In a paper presented to the profession ten years later, additional evidence was adduced corroborating these views.

Dr. L. S. Pilcher placed before the New York Academy of Medicine, at a meeting held May

16, 1878, the result of his experimental study. He demonstrated that the periosteum was not completely torn off from the posterior surface of the radius, but still remained attached to the upper fragment in its faulty position. Displacement of the lower end of the ulna was in every case apparent. The immobility of the ulna in its abnormal position was, he believed, the result of its fixation by the strong oblique fasciculus of the anterior ligament.

Although not agreeing as to the cause and persistence of the ulnar dislocation, both Moore and Pilcher are agreed that extension combined with pressure upon the fragments of the radius fails to overcome the deformity in Colles's fracture. But by first extending, then carrying the hand to the radial side and bringing it as far backward as possible, the ulna is released from its entanglement. Moore advised, further, to replace the tendon of the extensor carpi ulnaris, that the hand be swung from its backward position to the ulnar side, then circumducted into a position of flexion. During this manœuvre an assistant holds the forearm, and the hand of the patient is grasped by the corresponding hand of the surgeon. While the traction and manipulations are being carried out, the opposite hand of the surgeon is so placed that the thumb presses against the lower end of the ulna, thus forcing this bone upward and into place, and secures at the same time the return of the extensor carpi ulnaris tendon to its proper position, if it be found misplaced.

For the purpose of completely relaxing the ligaments which are responsible for the displacement it is wise to administer an anæsthetic. Without it the operation is painful, and the patient unavoidably resists the surgeon, so that reduction is not as easily or satisfactorily accomplished.

That the first step in the treatment of a fracture is its reduction no one will deny. In the treatment of so-called Colles's fracture not only is this emphatically true, but, when once completely reduced, the displacement cannot be reproduced by any ordinary movement.

Most surgical works content themselves with stating that reduction of the fracture can be accomplished by extension combined with direct pressure upon the lower fragment, either with or without the aid of an anæsthetic. This procedure does not recognize the ulnar complication, and therefore fails to accomplish the desired result.

It is self-evident that no kind of splint or dressing can secure a good result for an unreduced Colles's fracture. Too much emphasis cannot be laid upon the fact that the whole secret of success rests in the proper reduction of the fracture. Once properly reduced, it is a matter of no consequence whether an anterior or posterior splint, or both, be used, whether the splints be straight or pistol-shaped, whether they be simple in their construction or complicated mechanical contrivances.

Having reduced the so-called fracture, placed, as suggested by Dr. Moore, a single-headed roller bandage, two inches in length and half an inch in diameter, under the ulna from the pisiform bone upward, and secured this in place by an equally broad adhesive strap which encircles the wrist, the forearm is placed in a narrow sling; the hand, in a slightly prone position, overhangs the same, and by its own weight secures the ulna in its normal position. Some swelling follows the first dressing. It is therefore advisable to split the adhesive strap upon its dorsal surface immediately. After a few days no further swelling occurs, and a new dressing can be applied, which remains intact.

As a matter of fact, reduction having been accomplished, nature has provided us with the best kind of splint. The ulna lying at its side prevents any displacement of the fractured ends of the bone. All that is required is to place and secure this splint in its proper position. The reduction accomplished, the pad and strap, assisted by the position of the hand, secure this end. The patient is given to understand that the sling and pad must remain as placed.

In no other fracture is there such marked tendency to stiffness of the joints and infiltration into the synovial coverings of the tendons. Splints, of whatever character, by their restriction of active and passive movements, favor the development of this condition. This has been recognized by surgeons who use splints or fixed dressings, and many of them now advise their daily removal after the second week to permit passive movements, and their complete removal after twenty days. The author advises the patient to move his fingers daily as much as he pleases, and after the first week he institutes passive wrist movements. There is no pain during the after-treatment. The freedom from pain he regards as indicative of complete reduction. If pain persists after Colles's fracture, the writer believes the reduction is incomplete. After three or, at most, four weeks the dressing is removed, and the patient finds himself able to use the injured extremity as before and with complete freedom from stiffness or non-use of the extremity.

Reviews.

THE TREATMENT OF WOUNDS, ULCERS, AND ABSCESSES. By W. B. Cheyne, M.B. Ed., F.R.S., F.R.C.S.
Philadelphia: Lea Brothers & Co., 1895.

Cheyne states that in this work he limits himself to describing the methods which he always employs, which he knows to be efficient, and which he believes to be the simplest consistent with certainty in the results. He holds that suppuration occurring in a wound made through unbroken skin indicates that the surgeon has committed some avoidable error in his methods, and that it is only by honestly acknowledging this and by searching for the fault that such an occurrence can be avoided on another occasion.

His first chapter is devoted to general considerations. Then follows a description of general methods. It is noteworthy that the aseptic methods are not favorably considered, Cheyne holding that an ordinary surgeon who has not had a prolonged bacteriological training will find it a matter of the greatest difficulty—indeed almost impossible—to obtain results which are at all comparable to those which he would obtain were he to use the Listerian method; hence he strongly dissuades any one from attempting to employ the aseptic methods. Cheyne prefers to sterilize instruments in 1 to 20 carbolic solution.

It is worthy of note that through the entire section upon antisepsis the teachings of Sir Joseph Lister are honestly followed. The second section is devoted to the treatment of ulcers. Carbolic acid takes an important part in therapeutics here. In skin-grafting he prefers Thiersch's method to the non-pedicle flaps.

The last section of the book is devoted to the treatment of abscesses. In this there is nothing new. As expounding the views and practice of one of the leaders of antisepsis, the book is interesting and valuable.

SUGGESTIVE THERAPEUTICS IN PSYCHOPATHIA SEXUALIS, WITH ESPECIAL REFERENCE TO CONTRARY SEXUAL INSTINCT. By Dr. A. von Schrenck-Notzing (Munich, Germany). Authorized translation from the German, by Charles Gilbert Chaddock, M.D., Professor of Diseases of the Nervous System, Marion-Sims College of Medicine, St. Louis, Mo.
Philadelphia: The F. A. Davis Company, 1895.

The author in his preface states that the injury done by works of this class is not to be compared with the good accomplished. The proof he adduces as to this proposition fails to convince. In so far as the author suggests a means of treatment which holds out any hope to the unfortunate degenerates whom he too clearly describes, he has rendered a service. He has entered into the history of these cases, however, in unnecessary detail, which lays him open to the suspicion of pandering to the baser instincts for commercial purposes rather than of attempting to advance the cause of science and humanity by new and efficient therapeutics.

A MANUAL OF THE MODERN THEORY AND TECHNIQUE OF SURGICAL ASEPSIS. By Carl Beck, M.D. With sixty-five illustrations in the text and twelve full-page plates.
Philadelphia: W. B. Saunders, 1895.

Beck states that this book was written at the solicitation of those practitioners whom it was his pleasure to instruct at the New York Post-Graduate School, and to them, and indeed to all students of this topic, it will prove valuable in that it clearly outlines the bacteriological principles upon which the practice of asepsis and antisepsis should be founded, and in that the most reliable methods of avoiding wound infection are given. In cleansing the hands the ordinary methods are recommended, and indeed there will be found in this work simply an excellent selection of well-known methods and apparatus. The questions of open-wound treatment, the removal of dressings, and the details of surgical asepsis are elaborately illustrated by photographs. Aseptic injection, anæsthesia, and asepsis in private practice are sensibly and clearly discussed.

EPITOMES OF MODERN SURGICAL PROGRESS FOR STUDENTS AND PRACTITIONERS. URINARY SURGERY. By E. Hurry Fenwick, F.R.C.S., Eng. Illustrated.
Bristol, England: John Wright & Co., 1894.

This work appears, as its title indicates, as an epitome of the recent literature of the surgery of the urinary organs. Its value, therefore, depends upon the judgment displayed in the selection of subject-matter and the skill shown in arrangement. In neither of these respects is the book open to severe criticism. Under the section on Surgery of the Ureters it might have been well to have given in detail Van Hookes's method of ureteral anastomosis. Perhaps the most valuable part of the book is that describing the technique of modern operations upon the bladder. Prostatectomy in all its variations is treated of at length. A short section is devoted to seminal vesiculitis. Recent methods of treating diseases of the prostate and urethra are reviewed, and a very excellent description of the urethra as seen through the ærourethroscope is given.

The book is one which should have a wide circulation, since it represents a very comprehensive knowledge of current literature put in accessible shape.

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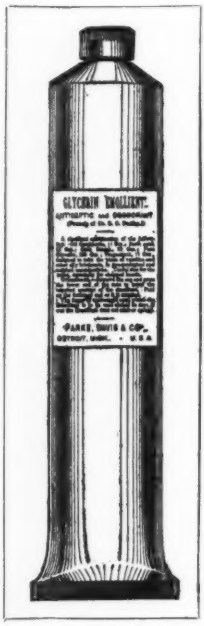

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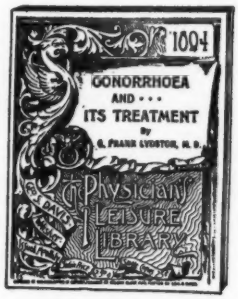

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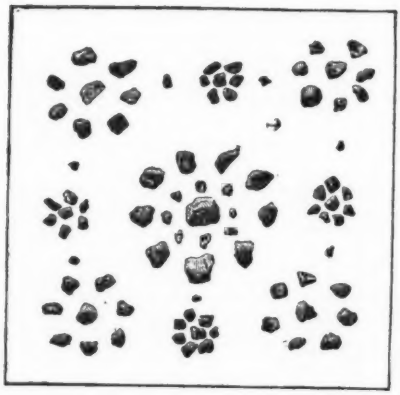

Illustration of the Calculi referred to by Dr. Claiborne. The engraving was made from a photograph and represents the exact shape of the Calculi; they are four times size of above.

Dr. John Herbert Claiborne, of Petersburg, Va., *ex-President and Honorary Fellow Medical Society of Virginia, in a letter, dated September 3, 1892, to Dr. E. C. Laird, Resident Physician at the Buffalo Lithia Springs,* says:—"I send by this mail a box of Calculi, passed at various times within the last year by Hon. T. J. Jarratt, our former Mayor, whilst drinking the Buffalo Lithia Water. They give him but little pain now when passing. I have never critically examined the broken Calculi, passed in such quantities from Mr. Jarratt's bladder, but am under the impression that the most of them are magnesian phosphates. There were specimens, however, which presented the appearance of oxylates, and some, I remember, impressed me specially as being uric acid. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results; but the results are there, and seeing is believing. I can only suppose that **in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse re-agents, which make this wonderful disintegration.** 'There are many things in heaven and earth not dreamt of in our philosophy,' and his is a short creed who only believes what he can prove or explain."

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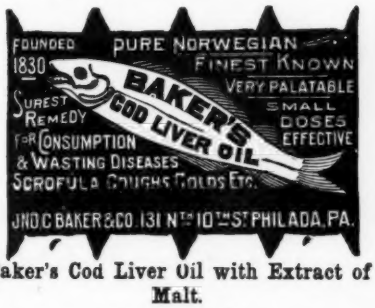
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NERVES.

Suppose we find the patient a little giddy upon rising in the morning. This means that the nerves do not have perfect control of the muscular system. As a test for this, direct the patient to stand with his feet close together, shut his eyes, and if the tendency is to reel, it is another evidence of lowered nerve tone. Or, stand with the arms extended, shut the eyes, and then try to bring the tips of his forefingers together in front of him. If they pass by or meet imperfectly, it shows the same thing. Or, the person may not be able to think as quickly as he should. To test this, ask the patient three simple questions in rapid succession, as, "Where were you just before you came into this room?" "What were you doing?" "How long did you remain?" The rapidity with which the answers are given indicate the rapidity of brain action. All these things show that it is of the utmost importance that the nervous system should be kept in tone. Otherwise, every part of the body languishes. This condition indicates the use of CELERINA (RIO) in teapoonsful doses four times a day, *TO INCREASE THE NERVE CAPITAL OF YOUR PATIENT.*

A full size bottle of CELERINA will be sent FREE to any Physician who wishes to test it if he will pay the express charges.

RIO CHEMICAL CO.,
ST. LOUIS, MO.

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